TREES MAGAZIN

Beautiful Winter Scene Mount Auburn Cemetery, Cambridge, Mass.

Midwest Chapter, National Shade Tree Conference, Denver, Colo. Feb. 11-13

Tree Injury By Termite Proofing Material — *Spencer H. Davis*

Trees–Their Place and Part in the Highway — *Karl Dressel*

January-February, 1953 — *The Journal of American Arboriculture* — Vol. 13, No. 2

NEW McCULLOCH
CENTRIFUGAL FIRE PUMP
MODEL 7 FP

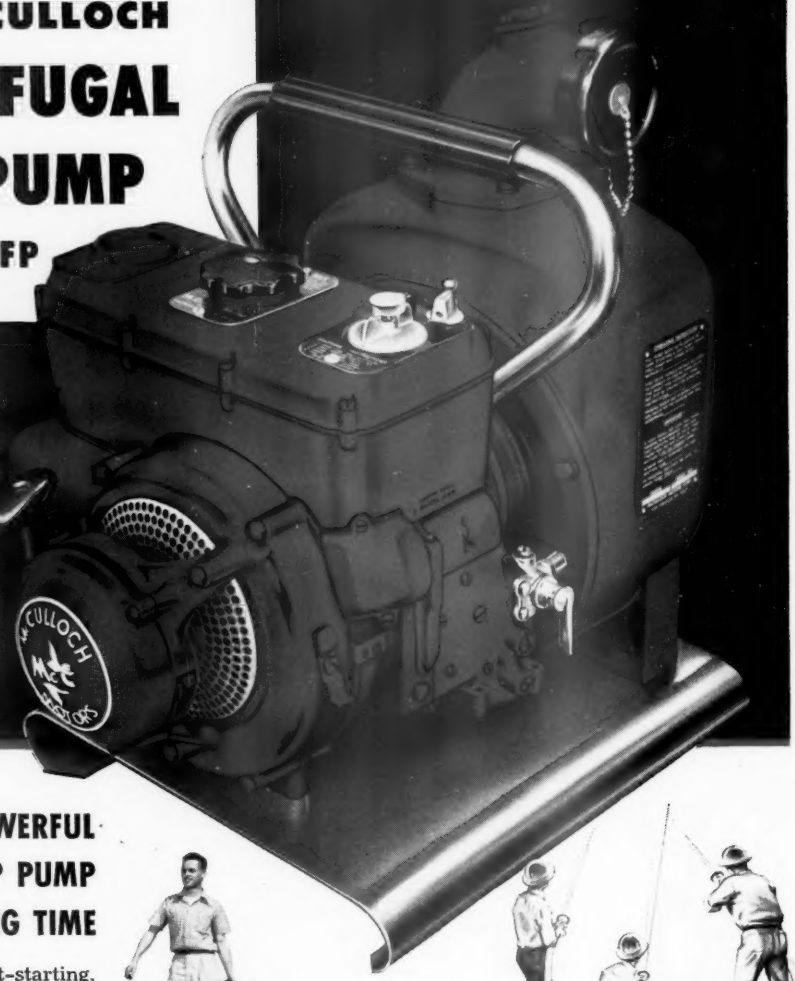
Weighs only 57 pounds complete!

Delivers 250 gallons per minute!

Develops pressures up to 100 psi!

Primes at 25 feet suction lift!

Delivers fog, stream, or foam!



LIGHT, POWERFUL McCULLOCH 7 FP PUMP CUTS FIRE-FIGHTING TIME

One man can carry this fast-starting, high-capacity fire pump. It's fast on the scene—and fast in action. Its features are unmatched by any other pump on the market.

Will operate three 1½-inch, 50-foot hoses with ⅜-inch tips, 55 pounds pressure in each line!

FEATURES

Special McCulloch 7-hp, 2-cycle engine • Special McCulloch self-priming centrifugal pump • Automatic-rewind cable starter; no ropes • Shielded against falling water • Hot spark for fast starting in any weather • Lubricated throughout by fuel mixture; no oil reservoirs, grease cups, or stuffing boxes • No bearings in pump; non-clogging type impeller mounted on engine shaft • Engine controls conveniently grouped in panel • Fuel tank built in; 3-way valve for auxiliary tank, if needed • Weighs 57 lb.; easy-carry handle at balance center.

PERFORMANCE CHART *(with 10-foot suction lift)*

Discharge Pressure PSI	10	20	30	40	50	60	70	80	90	100
Discharge Hd. Ft. Water	23	46	69	92	115	138	161	184	207	231
U. S. Gal. Per Minute	250	227	197	164	130	101	78	54	38	25

NATIONWIDE SALES AND SERVICE

5-1201

McCULLOCH

McCulloch Motors Corporation, Los Angeles 45, Calif.
Export Dept.: 301 Clay St., San Francisco 11, Calif., U. S. A.
Canada: 220 W. First Ave., Vancouver, B. C.
525 First Ave., Quebec, Quebec
224 N. George Street, Peterboro, Ontario

TREES Magazine is a bi-monthly Journal published at Olmsted Falls, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. Scanlon Publishing Co., 7621 Lewis Rd., Olmsted Falls, Ohio. Subscription by mail $2 per year; outside United States, $2.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

ALONG THE WAY With . . . EDW. SCANLON

■ BOB EVERLY must have LANDED in GLENCOE, ILLINOIS when the place WAS VERY YOUNG — his PHONE NUMBER is GLENCOE 6.

■ **WHY is it the GREAT MAJORITY is given the BRUSH OFF in HORTICULTURAL RESEARCH by STATE AND FEDERAL AGENCIES. The HOME GARDENERS are, by far, THE GREATEST GROUP in the country INTERESTED IN PLANTS—far greater than FARM, ORCHARD, VEGETABLE OR FORESTRY—but less articulate and the GARDEN MAGAZINES, and GARDEN CLUBS, their only voice, PERMIT horticultural research to REMAIN A TRICKLE. The NURSERY INDUSTRY should THROW ITS WEIGHT in the RIGHT DIRECTION.**

■ At a MEETING of the CUYAHOGA COUNTY ARBORISTS ASS'N recently DR. RUSS WHITTEN talked on the STATUS OF DED CONTROL—NOTHING NEW. The STANDARD OIL CO. OF OHIO was HOST and furnished COFFEE ANN. Their STAR SALESMAN OWEN BOVINGTON showed up in SOUP N' FISH—VERRE SWANK. (OWEN had a SHRINE MEETING LATER.)

■ **CHECK BACK on the COVER PICTURE of the LAST ISSUE (Nov.-Dec., 1952.) The tree is IDAHO LOCUST and according to DAVE PETRIE, the IDAHO BEARCAT, is a CROSS between HISPIDA AND PSEUDOACACIA. It was developed by the LATE ANTON DIEDERICHSEN OF PAYETTE. This is an IDEAL SMALL TREE for STREET OR SMALL HOME; I have used about 500 ON CLEVELAND STREETS and when THEY BLOOM (often twice a year) PEOPLE RAVE. They carry a LIGHT LACY CROWN of foliage, the BEAUTIFUL ROSE-PINK flowers, NO SEED; never grows OVER 30' and grows fairly fast—NOW THE DEBIT SIDE— So comparatively short lived, about 35 years (WHO'S WORRYING); may get BIT BY BORERS (easily controlled with dormant DDT), and is BRASH WOODED like IT'S PARENT. This isn't too bad, but WE BELIEVE this is a CHEAP PRICE to pay for the much HEAVIER BALANCE on the CREDIT SIDE. This tree IS LOVELY and SHOULD BE COMMON.**

■ Well HERE WE GO again—starting the new year OFF RIGHT are the PHONY ADVERTISERS. The LATEST IS a "TREE SIZE GLAD" up to six OR SEVEN FEET—back again is the ROSE OF SHARON TREE.

■ **FRANK ANDERSON the EERIE, PA. landscape impressario DROPPED INTO the RANCHO with the BOSS OF THE FAMILY one day. Had a NICE CHAT about the PLANT PROPAGATORS SOCIETY.**

■ Incidentally THE P.P.S. meeting in CLEVELAND, DECEMBER 12-13 was a honey with OVER 200 PRESENT at the kick-off. NEXT MEETING in Cleveland, December 10-11-12. FOR MEMBERS ONLY.

■ **HAROLD PERKINS of the UNIVERSITY OF CONNECTICUT is working on a NICE BULLETIN on STREET TREES. Out soon—THIS SPRING.**

■ I made the COVER AS COLD as I could this time so YOU GUYS in CALIFORNIA AND FLORIDA would feel normal. Guess you POOR LADS had QUITE A TUSSLE with the LOW NOTES on the THERMOMETER THIS WINTER.

■ **THANKS for the SPLENDID COVER PICTURE go to MR. OAKES I. AMES of the MOUNT AUBURN CEMETERY, CAMBRIDGE, MASS. The scene is a RANDOM SHOT in the Cemetery showing one of the PICTURESQUE WINTER LANDSCAPE effects created by the MAGNIFICENT TREES with which the GROUNDS IS COVERED.**

■ Judging from letters received from MAUNSELL VAN RENSSELAER the SARATOGA HORTICULTURAL FOUNDATION must be accumulating quite a WORTHY COLLECTION OF TREES. Should be WORTH A LONG STOP on my NEXT VISIT TO CALIF.

■ **WILBUR SEUBERT sent the above picture from MEXICO. We DON'T HAVE the only "DO-NUT" TREES. WIL had quite an EXTENSIVE AND INTERESTING trip in MANANA LAND.**

■ If YOU HAVEN'T seen the "FLOWERING TREE MAN'S" new TREE CATALOG, spend a buck and GET ONE. It's a book on the MOST BEAUTIFUL TREES in the world. Send to ED MENNINGER, STUART, FLORIDA (Tropical trees).

■ **I'd LIKE TO START a SERIES in the NEXT ISSUE, taking one TREE EACH ISSUE and cover ALL THE FACTS on its use; culture; features; bad points; INSECT AND DISEASE HIGHPOINTS; how it moves; response to feeding; best varieties; value as a street or shade tree;—WILL ASK FOR ANSWERS to these questions FROM YOU DEAR READERS (oh brother) and if I GET PLENTY of answers, WHICH SHOULDR DO, then we will have SOME REAL DATA—nuttin like it anywhere.—AS A TIPOFF lets say the FIRST TREE will be ACER RUBRUM —the neglected RED MAPLE — start compiling friends and LETS MAKE IT GOOD.**

CONTENTS

Vol. 13 Bi-Monthly No. 2

Subscription Price $2.00 Per Year
(Foreign $2.50) 35 Cents Per Copy
TREES MAGAZINE
7621 Lewis Rd., Olmsted Falls, Ohio

The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

CONTENTS

Editorial 4
"Last Friday In April" Coming Soon
Univ. of Massachusetts Conference 5
Britton and Brown Flora 5
Tree Injury Caused by Some Termite Proofing Materials . . 6
By Spencer H. Davis
Recommendations of Proposed Standards of Nursery 7
Advertising Copy
Trees—Their Place and Part In The Complete Highway 8
By Karl Dressel
Experiences In Summer Transplanting of Trees (Part II) . . 10
By Theodore F. Mathieu
A Solution To The Stump Removal Problem 12
By Herbert J. Cran, Jr.
Fungus Attacking Palms 12
Propagators Hold Successful Meeting 14
By Fred C. Galle
NAA News 24
By Paul E. Tilford

WHAT—WHERE—WHEN

Midwest Chapter meeting, N.S.T.C. Cosmopolitan Hotel, Denver, Colorado. February 11-13.

Michigan Forestry and Park Association, Union Building, Michigan State College, East Lansing. February 20.

The Great Lakes Park Training Institute, University of Indiana, Angola. February 23-27.

Southern Chapter meeting, N.S.T.C. Fort Sumter Hotel, Charleston, South Carolina. March 20-21.

Tree Wardens, Arborists and Utilities Conference. University of Massachusetts, Amherst. March 23-27.

Western Chapter meeting, N.S.T.C. Santa Monica, California. May 13-16.

National Shade Tree Conference, LaSalle Hotel, Chicago, Illinois. August 17-21.

For Sale: Roto-Mist
Operated less than 25 hours; mounted on heavy-duty factory made trailer; equipped with nozzle lights for night spraying.
A BUY AT $2500.00
M. O. WOODS,
963 N. Park Place
Decatur, Ill.

Observe **NATIONAL ARBOR DAY** Last Friday in April

Jan.-Feb., 1953 **Journal of the National Arborist Association** Vol. 13—No. 2

EDWARD H. SCANLON, Editor
7621 Lewis Rd., Olmsted Falls, Ohio
ADams 5-2357

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

ADVISORY COUNCIL

L. C. CHADWICK
Professor of Horticulture
Ohio State University, Columbus, O.

RALPH D. CORNELL
Landscape Architect, Los Angeles, Calif.

H. DANA BOWERS
State Landscape Engineer
Division of Highways
Sacramento, Calif.

MAUNSELL VAN RENSSELAER
Director, Saratoga Horticultural Foundation
Saratoga, Calif.

NOEL B. WYSONG
Forester, Cook County Forest Preserve, River Forest, Ill.

PAUL E. TILFORD
National Arborist Association
Wooster, Ohio

FORREST C. STRONG
Assistant Professor of Botany
Michigan State College
East Lansing, Mich.

CHARLES F. IRISH
Arborist, Cleveland, Ohio

P. P. PIRONE
New York Botanical Garden
New York, N. Y.

DONALD WYMAN
Horticulturist, Arnold Arboretum
Jamaica Plain, Mass.

CURTIS MAY
Principal Pathologist, Bureau of Plant Industry Station, United States Department of Agriculture, Beltsville, Maryland.

KARL DRESSEL
Assoc. Prof. Forestry, Michigan State College
East Lansing, Mich.

MALCOLM A. McKENZIE
Director, Shade Tree Laboratories
University of Massachusetts
Amherst, Mass.

EMANUEL FRITZ
Associate Professor of Forestry
University of California, Berkeley, Calif.

Out On A Limb

"LAST FRIDAY IN APRIL" COMING SOON

Very shortly now another spring will jump up on the calendar and with it will come another Arbor Day. In fact on April 24th, the "Last Friday in April," eleven states will observe the celebration of this notable event through the medium of planting trees, school ceremonies, proclamations by the Governors, newspaper and radio and, we hope, television publicity.

The fact that eleven states will observe the date together is the result of a program inaugurated by TREES thirteen years ago. Many visionary people in the eleven states now legally observing the "Last Friday in April" as Arbor Day, saw the immense value to be derived from a unified observance of the day, and they bombarded their legislators with demands to make the "Last Friday in April" their Arbor Day by LAW.

The legislative drives succeeded in Maine, Massachusetts, Connecticut, Rhode Island, New Jersey, Ohio, Indiana, Illinois, Wisconsin, South Dakota and Nevada. There are quite a number of states in between these charter member states which if filled in would present a solid tier of northerly states in the east, middle west and Rocky Mountain area that would greatly enhance the possibilities unified national publicity specifically by radio and television, and by trade and general horticultural magazines.

The argument has been advanced in some states that the "Last Friday in April" is not a suitable day to plant in that state. We know that. But, it isn't important. The important thing is education—teach people the values of trees—teach them to protect them as benefactors—teach them to be more discriminating in their use of species—teach them how to use them correctly. These and many other things can be taught people if we wake up to the possibilities available to us. We will never do it if we stay in that well populated old rut—and that's where we are—for sure.

In Ohio, the Governor, Frank J. Lausche has in the past two years really given a tremendous push to Arbor Day. He has held meetings of representatives of all prominent organizations in the state to stimulate interest in general tree planting throughout the state, both forest and ornamental. The results last year were terrific—over 15 million trees were planted. This year the goal is 25 million. It goes to show what a man in a position of such prominence can accomplish—and we'll venture a guess that more people will remember him for his tree planting activities than for any other. Any way it proves the value of publicity. Somehow or other the ballyhoo of the past few years got through to the Governor and, being astute, he immediately recognized the good that would accrue to his state through such a program. You and I, dear reader, could scream our heads off for thirty years and not even come close to having 15 million trees planted. The value of widespread publicity on a united Arbor Day will result in more concerted efforts like the Ohio program and it

can only come from horn tooting, not by being academically or meteorologically correct about a matter quite secondary in importance.

The legislatures in many states are meeting this year and it is to be hoped that progressive people in such states as Pennsylvania, New York, Kentucky, West Virginia, Iowa, Idaho, Maryland, Delaware, Virginia, New Hampshire, Missouri, Tennessee, Kansas, Colorado, Utah, Wyoming, Washington and Oregon will petition their legislatures to present a bill that will simply state that henceforth "the Governor shall annually proclaim the Last Friday in April as Arbor Day."

There should be a National Arbor Day regardless.

Arborists School

Tree Wardens, Arborists, and Utilities Conference

Sponsored by Massachusetts Tree Wardens' and Foresters' Association
March 23-27, 1953
Bowditch Lodge,
University of Massachusetts
Amherst, Massachusetts

Tentative Program

Monday, March 23

9:00 a.m.—Registration
Plant and Disease Identification Contest
1:00 p.m.—How an Up-to-Date Municipal Tree Organization Operates. Movie.
2:00 p.m.—Safety and Insurance—Lumberman's Mutual & Casualty Co.
3:00 p.m.—Importance of Advertising in a Tree Organization—J. Cooke White, Ralston Tree Company
4:00 p.m.—Supplying Tree Organizations

Tuesday, March 24

9:00 a.m.—Problems of Tree Care on the Massachusetts State Highways—J. L. Beasley, Supervisor, Massachusetts Dept. of Public Works
10:00 a.m.—Small Trees for City Streets — Ed. Scanlon, Commissioner of Shade Trees, Cleveland, Ohio.
11:00 a.m.—Shade Tree Laboratory Reports — Dr. M. A. McKenzie, Director Shade Tree Laboratory, University of Mass.
1:00 p.m.—Future of Arboriculture Students — William Rae, Frost and Higgins Company.
2:00 p.m.—Lightning Protection—F. J. Hoey, Electra Protection Co.
4:00 p.m.—Chemotheraphy — N. E. Caroselli, Association Pathologist, Bartlett Tree Expert Company
7:00 p.m.—Banquet—Ladies Invited. Entertainment
Speaker: Ed. Scanlon, Commissioner of Shade Trees, Cleveland, Ohio

Wednesday, March 25—Utility Day
"Public Utilities and Their Tree Problems" — Electric Lines Club of New England

Thursday, March 26

9:00 a.m.—Report on the Massachusetts Arborist Bill—Mass. Arborist Association
10:00 a.m.—Oak Wilt and Phloem necrosis—Division of Forest Pathology, U. S. D. A.
11:00 a.m.—Insects and Insecticides — William Becker, Assistant Professor of Entomology, University of Mass.
1:00 p.m.—Problems Confronting a Municipal Tree Organization
2:00 p.m.—Tree Evaluation—Orville Spicer, President of Bartlett Tree Expert Company, Stamford, Conn.
3:00-4:00 p.m.—Conservation in the Connecticut Valley

Friday, March 27

9:00 a.m.—Arboriculture in Maine—Ed. Grove, Extension Arborist, State of Maine.
10:00 a.m.—Selectmen's Association View of the D.E.D. Problem.
11:00 a.m.—Progress Report on the Dutch Elm Disease Control — Mass. Department of Conservation.
12:00 a.m.—Massachusetts Revised Tree Laws—J. O'Doherty, Division Superintendent, Mass. Conservation Dept.

Meals may be obtained from the Draper Cafeteria on the campus. Rooming facilities are to be handled by the Housing Director, University of Massachusetts, Amherst, Mass.

Tree Butcher Cocktail

Mix equal parts of ground Sassafras, Sheep Berry and American Cranberry with one jigger of seven year old Sugar Maple sap. Chill over a substantial portion of Michigan sleet, well stirred with a stem from a Grey Dogwood. Top with extract of ground Hazelnut.

The above mixture to be served in muggs made of Basswood from trees of over 16 winters; the Basswood to have inserted inlays of Red Osier branches. Limit to each consumer one mug.

Please bear in mind that this is an original recipe and because of the extreme potency and is only suitable for consumption by genuine tree butchers, the above is not to be reprinted nor used commercially without the express consent from the source of origin, namely F. H. Heineman.

Otto Clauss, Chicago, Ill.

New Flora Published

The New York Botanical Garden has published in three volumes The New Britton and Brown illustrated Flora of the Northeastern United States and adjacent Canada by Henry A. Gleason, Head Curator, and collaborators. This work succeeds the well-known Illustrated Flora by Nathaniel L. Britton and Addison Brown (for 50 years a standard work on the flora of northeastern United States and adjacent Canada). It is directed to the layman as well as to the professional botanist. All descriptions are entirely new and each of the 4660 species is fully illustrated by new drawings. Other species, subspecies and varieties are given briefer treatment. New dichotomous keys to families, genera and species add substantially to the usefulness of this work. It is the only completely illustrated flora for the area covered, which extends from the St. Lawrence River to southern Virginia and westward to Missouri and Minnesota. In accordance with time honored precedent the flora includes seed plants, ferns and fern allies and includes all plants of these groups which grow without cultivation in the area covered. All species bear botanical names in accord with the International Code of Botanical Nomenclature. Many common names also are given.

An introduction of 29 pages discusses floristic groups in the northeastern United States, gives a short history of the vegetation of the area and the development of knowledge of the plants of the area, discusses the scientific names of plants and nomenclature together with the principles of classification and variability and supplies information on how to collect, preserve and study botanical specimens and on how to use the Flora.

The contents of each volume are indexed. An index for the entire work is included in Vol. 3. A list of botanical authorities and a complete glossary are in Volume 1.

The date of publication is December 10, 1952. Three volumes, 8 x 11 inches, bound in green buckram, each volume approximately 500 pages, boxed, list price $30.00, plus 50 cents postage and handling. The price on orders received before July 1, 1953 from the United States and Canada is $27.50 postpaid.

The work can be ordered from The New York Botanical Garden, Bronx Park, New York 58, New York.

Trees...

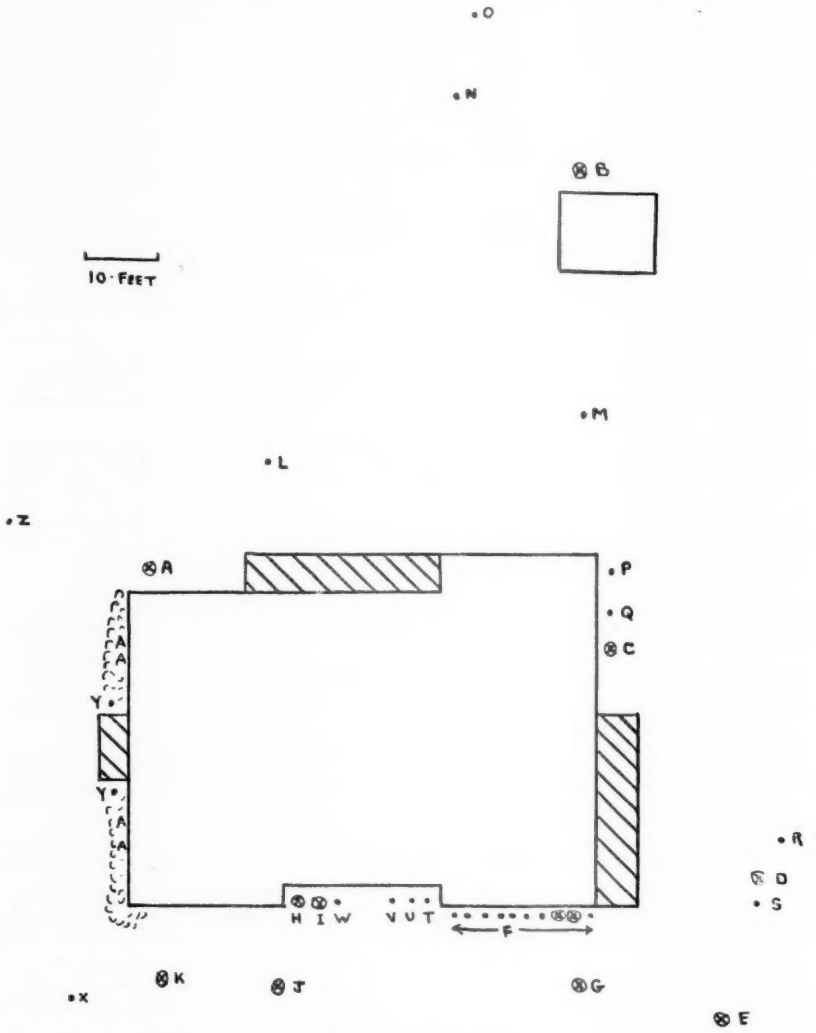
Tree Injury Caused by Some Termite Proofing Materials

By Spencer H. Davis

Associate Professor of Plant Pathology
Rutgers University

As time goes on, more and more homes become infested with the lowly termite —more termite-proofing jobs are done —and more trees and foundation plants around the homes are killed or injured. It is true that the percentage of plants killed by some of these termite-proofing materials is very low, compared with injury and death caused by diseases, insects, poor planting, grade changes, and so on, but at least the number is significant. It is also true that a house which is badly infested with these wood destroying insects is the first concern of the home owner and the surrounding plant growth becomes secondary for the time being. On the other hand, we have talked with a great number of home owners who, when confronted with the termite problem have quickly signed a contract for a termite proofing job (even though most of these contracts stipulate the fact that the exterminator will not be held responsible for any injury incurred by adjacent trees and plants). Then, a month or so after the job is completed, Mr. Homeowner suddenly begins to notice a number of his prize trees around the home are displaying branches or entire sides with newly killed leaves. At this point, Mr. H. not only has forgotten the release-from-damage-clause in his contract but the chances are that he does not even associate the termite-proofing job with the injury to his trees. No, he has not been trained in the lines of tree diagnosis nor does he think along the path that leads him from cause to effect when it concerns growing plants. In a law court he may be qualified to present an excellent case which proves a point via the route of circumstantial evidence. Or, if perchance he is a medical doctor, he may be a specialist at diagnosis of human ills. And if our client is a salesman he may be well versed in the field of the follow-up. But when it comes to a sick or injured tree, all three of these men will forget all they know about circumstantial evidence, diagnosis, and follow up and in turn will call in a man who is a qualified specialist well versed in trees and their troubles. That's you!

Now comes the careful inspection of the chlorophyllous patients. By virtue of your experience you can quickly see that no insect is responsible for the brown leaves, dead branches, and discolored streak beneath the bark on the trunk. You rule out the possibility of any wilt-inducing fungus attacking the east side of oak on the west side of the house, the northerly branches of the maple to the south of the house, and the entire west side of the magnolia at the south-east corner. Few fungi would attack in such a pattern. No grade changes are apparent and no other trees in the neighborhood are similarly affected so that adverse climatic conditions can be ruled out. Finally it comes to the routine questioning of Mr. Homeowner regarding anything which he may have done to bring about the trouble. His home is not serviced with illuminat ing gas; he did not apply salt to his icey pavements last winter; he has not used any weedkillers on the property; the downspouts are not copper; nor have the neighbors ever complained about his trees shading their property. If only one or a few trees have been injured, the chances are very slight that he will think to venture the information about the termite-proofing job which had been done. I know this because I have run into the situation many times.



For explanation of this diagram refer to text on next page.

And now for some suggestions as to the recognition of this trouble by symptoms and inference:

Usually the foundation planting of shrubs, broad-leaved evergreens, small narrow-leaved evergreens, annual flowers and ground covers are not affected whereas large shade trees at a greater distance from the building are injured. When we stop to realize that the termite treatments are usually injected at a moderate depth around the foundation and that foundation plants are usually shallow-rooted plants, we immediately understand why the shade tree which may be ten to forty or more feet from the home but which has a

deeper root system—and a far reaching one, can be affected.

In like manner we look at a number of trees of the same age and size, but differing in species, and we see that some are not injured while those immediately adjacent are hurt. Sawara Cypress, Atlas Cedar, etc., with root systems less extensive than the crown spread, remain uninjured whereas Oaks, London Plane, Black Locust, etc., with their extensive roots, are prone to be troubled.

In most cases the branches which are killed are on the side toward the treated building, but do not be fooled when a single branch on a tree is affected and it is on the side away from the house. The branch either had its origin on the near side and has merely grown around the other way, or you may find that the entire trunk is twisted through 180 degrees. This is not at all uncommon, and when we picture the straws in a jar at a soda-fountain, and visualize twisting the entire group, we see why the poison picked up on the north side will effect a branch on the south part of the crown.

Few times will you find an entire tree killed if it is fifteen feet or more from the treated area. In only a single instance have we seen such a case. Large Oak, Maple, Plane, and Apple trees were affected on one side only at a distance of about ten feet from the house foundation, whereas a Hackberry 21 feet from the house was completely killed. This, the wood technologist attributed to a heterogenious type of growth of individual wood fibers.

Usually you will find the leaves are completely killed, but in those branches where you get only a small portion of affect, the leaves will show symptoms opposite those typical of leaf scorch. You recall that scorch turns the leaf brown *between* the veins, whereas slight injury from termite-proofing materials will result in brown veins with the area between the veins remaining green for a short period.

In most cases the trees suffer from what we might call a "single shock." By that we mean that the damage shows up all-at-once and not gradually over a long period. This is hard on the constitution of the homeowner but it is a point to remember when you are his consultant. Assure him that he is not in the process of losing all his prized shade. I am not suggesting protection for the unscrupulous exterminator who disclaims any responsibility for the damage his product has wrought, but I am suggesting that you get your client in a better frame of mind. Point out to him the fact that your tree-repair bill will be negligible compared with the cost of repairing a termite damaged home if the exterminator had not done his job. Wait for just a couple weeks after the injury first appears on the trees, then prune out the dead wood and trace-out the bark down the trunk. In a few years all but the most seriously damaged trees will come-back and cover themselves over the damaged area.

Finally, most homeowners are interested in the prevention of trouble rather than correction or repair after it is done. I believe that in many cases the shade trees would be protected if a minor job of root-pruning were done *prior* to the application of the termite-proofing materials. Cutting the roots (removal should not be necessary) at a distance several feet away from the foundation should do much to prevent the trouble. In doing this, the roots which reach the foundation and which are in the area of the chemical are no longer connected with the rest of the root system and the tree, and thus the poison would not be taken up to kill part of the crown. Or, secondly, I wonder why more exterminators do not make more use of the chemicals such as DDT and Chlordane. As we understand it from the entomologists, these two materials would have practically no ill effect on the tree roots and at the same time would do an excellent job of termite eradication. They tell us that treatments may have to be applied again in four or five years, but at least Mr. Homeowner would not be faced with the tree damage which may follow the use of some of the more commonly used materials.

So, Mr. Tree Expert, if you are not already acquainted with this problem as the result of first-hand information in the field, add this question to your routine customer-examination if you think it might apply—"Has your home been termite-proofed recently?"

Typical Distribution of Termite-Proofing Injury Around a Home

A commercial termite-proofing job was done, using a proprietary compound, on June 26, 1950. High temperatures and low rainfall prevailed for the 20 days previous to treatment, with 0.13" falling on June 25. Temperature on June 26 was 93°. A trace of rainfall was recorded in the area on June 30, followed by .09" on July 3 and .37" on July 6.

First injury effects were noted on July 1, progressed until July 13, after which no further advance was recorded.

Listed below is the key to the plants on the property indicating the relative injury as recorded on July 13, 17 days after treatment of house and shed.

Injured

A. Apple	—10" DBH—50% away from house
B. Mulberry	—12" DBH—100%
C. Jap. Holly	— 4" DBH—50% toward house
D. Laurel Oak	— 6" DBH—33% toward house
E. Hackberry	— 9" DBH—100%
F. Azaleas	—18" Hi—2nd and 3rd from rear were 100%. Others had no injury
G. Apple	—10" DBH—80% toward house
H. Hicks Yew	— 5' Hi — 90% toward house
I. Spread Yew	— 4' Hi — 90% toward house
J. Red Oak	— 9" DBH—10% toward house
K. Apple	—10" DBH—30% toward house and 10% away from house.

Not Injured

L. Sycamore Maple	— 9" DBH
M. Sycamore Maple	— 9" DBH
N. Norway Maple	—12" DBH
O. Silver Maple	—13" DBH
P. Cryptomeria	— 3" DBH
Q. Retinospora	— 3" DBH
R. Apple	—10" DBH
S. Tartarian Honeysuckle	— 5" DBH
T. Hicks Yew	— 5' Hi
U. Spread Yew	— 4' Hi
V. Capitate Yew	— 5' Hi
W. Capitate Yew	— 5' Hi
X. Pin Oak	— 6" DBH
Y. Juniper	— 5' Hi
Z. Hemlock	—10" DBH
AA. English Ivy	—(— ——)

Recommendations of Proposed Standards of Nursery Advertising Copy

All advertising, including that of nursery products, should be truthful and not misleading. Full information should be given to consumers of nursery stock so they will clearly understand the important characteristics of the plant materials purchased. Omission of information the consumer should have when purchasing can be just as misleading as exaggerated claims. To help accomplish truth in advertising, standards for advertising copy relating to nursery stock are suggested by the American Association of Nurserymen as follows:

1. On all plants advertised the true size should be stated.

   On all plants advertised, the true size without misleading description should be stated. Grades and sizes for plant materials have been worked out by the American Association of Nurserymen and many other authorities, and they have been approved by the American Standards Association. Where sizes are not specified in the copy, the advertising should be questioned. Otherwise, the consumer may be led to believe he is receiving a mature plant, whereas it may be only a rooted cutting, or seedling. The inclusion in advertising of American Association of Nurserymen grades is desirable.

(Continued on Page 24)

Trees...

Trees — Their Place and Part In the Complete Highway

By Professor Karl Dressel
Department of Land and Water Conservation
Michigan State College
East Lansing, Michigan

A study of history shows that trees have held a dominant position in road side vegetation from the dawn of recorded civilization to the present time and will continue to hold this place into the future. Shade trees held an important role in ancient man's religion, myths and folklore. Early man believed trees were the temples of his Gods and were sacred objects to be preserved. Under many ancient kings the destruction or injury of a roadside tree was punishable by death.

It is believed the Persians conceived the idea of organized tree planting along the road as early as 605 B.C. The Arabians spread this idea to the rest of the civilized world. The early Chinese people were ordered to plant rows of trees along the roads to guide the traveler night or day. The ancient peoples of Mexico and Peru built roads and planted shade trees on either side of the traveled way. Thus we see that ancient man and roadside trees came down through the ages side by side.

The North American Indian before the white man came established trails for travel following old established animal paths. Trees along these paths were important in the life of the Indians. These trails were narrow as the Indian custom was to travel in single file. This placed the trees close at hand for protection and escape in case of an attack. The trees along these narrow trails allowed the Indian to get close to the animal when hunting with his crude weapons. The Indian often used the roadside trees' bark much as we use bulletin boards. They carved crude symbols telling of their exploits and the happenings of the day. Daniel Boone and other early explorers also used the bark of roadside trees for this purpose. In some areas the Indians bent and trained young saplings as trail side signs to indicate the direction of the trail. Thus the early Indians used roadside trees for safety, food and information.

The early colonists on our Atlantic coast were interested in trail and roadside trees. The citizens of Watertown, Massachusetts in 1627 voted in town meeting to mark the roadside trees and instructed the court to place a heavy fine on any one destroying one of these trees. The route of all the early travel routes were marked by blazes on the roadside trees.

The roadside trees were very important in the settlement of the country beyond the Appalachian Mountains. General Braddock's army was defeated by the French and Indians due to his inability to take advantage of the cover offered by the roadside trees. The early explorers used the roadside trees for protection from the Indians, observation of the country ahead and rafts to ford the larger streams. Many an escaping Indian prisoner without weapons had to survive on food from the roadside trees until they could reach a settlement.

Later as vehicle roads were built the roadside trees furnished the material for the plank and corduroy roads so necessary to the early settlers. On the early Santa Fe Trail the wagons used to stop at Council Grove. Here they formed into caravans, repaired their equipment in the shade of the roadside trees. Here they cut the hickory to be taken on the trip for wagon repairs on the prairies ahead. Early builders of the National Highway were instructed to blaze a tree each quarter mile and at every turn of the road. Roadside trees on these early vehicle roads were often a nuisance when they fell in the road or the roots concealed in the mud overturned the vehicle. President Martin Van Buren's carriage was overturned and years later the D.A.R. erected a tablet "On This Spot a Tree Spilled a President."

The early settlers of the midwest saved and planted trees along the roads for shade, beauty and increased property value. Many of these trees still stand as monuments to the foresight of our early pioneers. The early settlers on the great plains missed the shade trees of their former eastern homes. Many of them as soon as possible planted trees along the roads.

With the invention and increasing use of the automobile the concepts of roads and roadside trees had to gradually change. The wagon roads were built for low speed travel and had very sharp right angle turns. In redesigning these roads to the new faster traffic many roadside trees had to be sacrificed. The early motorists found the shade of roadside trees a more comfortable place to change tires and repair the automobile. Many farmers became too enthusiastic by encroaching upon the road right of way with their yards, gardens and fruit trees.

Our modern concept of roadside developments grew gradually through the years. L. W. Page in 1912 wrote a book on "Roads, Paths and Bridges," in which he devoted a chapter to "Roadside Treatment." He had a very good concept of roadside development. Most of this chapter was devoted to roadside trees and their value to the highway.

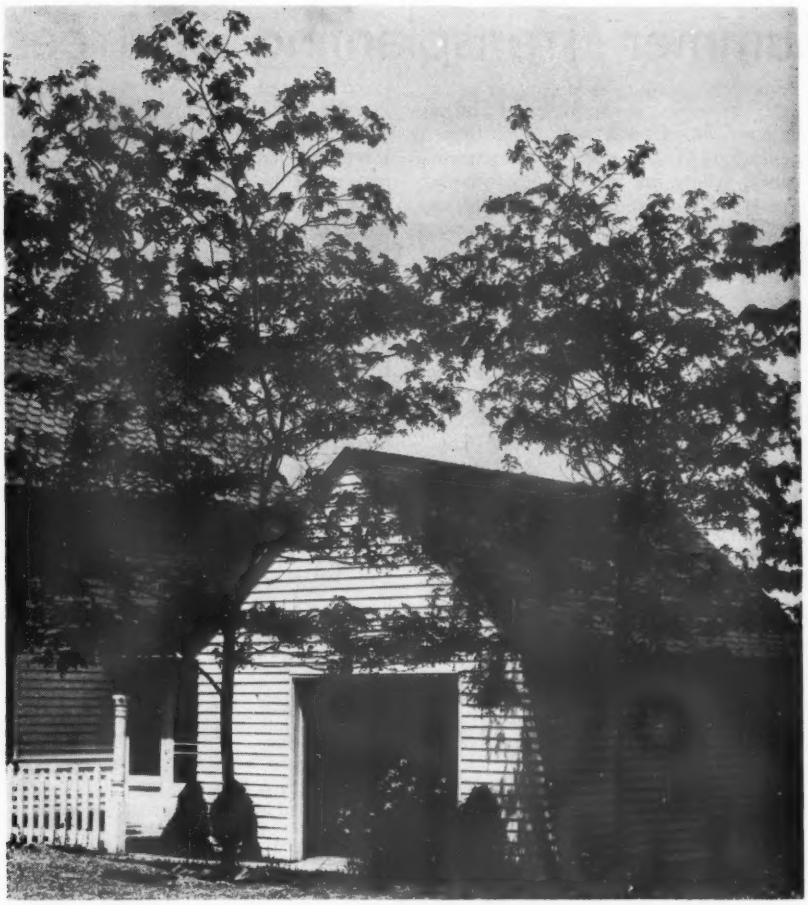
Thus we catch a glimpse of the place of the roadside tree from the trail, toteroad, pack road, wagon road and early automobile road. Sometimes the tree was an aid to the traveller and other times a nuisance depending on the tree's location in the roadside.

The early automobile road gradually developed into our modern roads of today. The change has been one of steady progress with the roadside tree assuming a more important place in both utility and beauty. The tree is the most dominant vegetation used in our roadside development work. The shrubs, vines, and ground-cover, all play their part in the complete picture but in most cases should be used to compliment the trees. The other vegetation can be replaced easier and moved more economically than can well established trees. Therefore first consideration should be given to the trees in a roadside development plan. The value of roadside trees in the minds of the traveling public, the highway engineer and abutting property owner has been slowly but steadily advancing. Today most of these recognize that those things which improve the appearance of the highway also improve its efficiency and safety.

Much of the highway travel in the United States is for pleasure and recreation with many sections dependent upon this source of income. Roadside trees aid in making the trip safer, more relaxing and more enjoyable. The ideal comment should be, "What a pleasant drive, it's hard to believe we have been driving all day."

Roadside trees can be used in many ways to make the trip safer and more enjoyable. Trees are used to frame and focus our attention on pleasing distant scenes of forests, water, mountains and well cultivated fields. Undesirable views can be screened from the traveler by trees which at the same time add beauty and shade to the highway.

Roadside trees contribute to highway safety by relieving the monotony which so often makes the driver drowsy. Trees can be used to vary the skyline and break the monotony. The planting of trees



The lovely, dainty little Idaho Locust. When covered with its rose-pink flowers it is an unparalleled sight. Growing no more than 25 feet it is an ideal street, small home and highway tree.

on slight rises makes the hill appear higher in contrast. Roadside trees can be used to focus the driver's eyes back on the road at danger points. Trees can warn and alert the motorist to approaching change in road alignment both day and night. Roadside trees often help to keep the sun out of the driver's eyes at critical times of the day. Roadside tree shade often entices the weary drivers off the shoulders of the road to rest making them safer drivers when they continue their journey.

In some sections of our country roadside trees help to control drifting snow, sand and dust. In one study in the upper Peninsula of Michigan, woodlands adjacent to the highway reduced snow removal costs by about one half over adjacent open field areas. This results in a considerable savings over the years. In these areas the purchase price of the woods would soon be refunded in lower maintenance cost and the public would have an added dividend in beauty, without additional costs.

The roadside tree has many things to offer on our modern highway in beauty, comfort and safety. The roadside tree will continue to be the dominating vegetative feature of the modern highway.

Unfortunately we do not always have good conditions for trees along many of our roadsides. Many of our roadside tree problems would be solved if we could have wide enough rights of ways and the road authorities had strong legal control over the trees. Too often the road right of way is trying to furnish growing space for trees and space for overhead public utility structures both of which must be back far enough from the traveled way so as not to be a traffic hazard. Unfortunately in many cases this restricted area is in reality wide enough for only one of these but in compromise we crowd both in the area. As a result we aggravate the troubles of both the highway authorities and the public utility company. In the end neither is very well satisfied with the highway appearance and the higher maintenance costs. The public utilities are a necessity in our modern living and are demanded by the public. Wide enough rights of ways would solve the problem.

In planting roadside trees changes in site and soil will always present ever changing problems. Some of these are complicated by road cuts and fills necessary in road construction. These areas will always require special consideration in our roadside plantings.

In the planting of roadside trees it is difficult to foresee future changes that may take place in conditions on and off the right of way. Trees placed in the wrong place may in future years have to be sacrificed in the name of progress. This means the loss of trees long before they reach economic maturity. Many fine roadside trees are sacrificed each year in road widening, driveway entrances and expansion of public utilities. In the past local pressure and the natural reluctance to destroy a tree has persuaded us to leave trees too close to the pavement which may become dangerous to road traffic.

If trees are to be planted under or near existing overhead utilities there should be an agreement between the road authorities and the involved public utility companies as to the utility companies future plans for removal or modification of construction if there will be future serious tree and wire conflicts. If there is apt to be serious tree and wire conflict it can often be reduced by the proper selection of tree species that will best fit the location. Tree species vary greatly in shape, branch spread, growth habits and ultimate height.

Underground utilities should be kept as far from the trees as possible due to danger of leakage and root destruction in construction and future repairs. Many roadside trees could be saved by requiring the utility to tunnel under large roots. Drainage ditches can be tunnelled under tree roots and tiled in to save many fine trees.

Serious thought should be given to the removal of roadside trees that have been seriously mutiliated in the past and now serve only as a monument to past mistakes. Many of these add nothing to the roadside beauty, comfort, or safety. There should be a gradual removal program over a period of years. By removing one here and there over a period of years few people will ever notice their disappearance.

The question of whether to place the tree or the public utility structure on the edge of the right of way has been a debatable question for years. If there were a choice under existing conditions the tree would select the location near the property line with the utility structure near the traveled way. In this location the tree would be living under more normal growing conditions with less root restrictions. It would also be less affected by artificial drainage, air currents of traffic and reflected heat from the pavement. There would be

(Continued on Page 26)

Experiences In Summer Transplanting of Trees

By Theodore F. Mathieu
Department of Horticulture
Ohio State University
Paper given at Ohio State Univ. Short Course

Charles W. Williams, Williams and Harvey Nursery Co.,
Kansas City, Missouri.

"While we have had very little summer moving of trees, we do plant them until the leaves are pretty well grown, usually about May 10th, with splendid success, and we usually lay off planting until September. We have found, however, that early fall planting has a distinct advantage over midwinter, as the trees' roots will callous and even make considerable root growth, if planted as early as September, and while they may shed their leaves a little earlier, they will put on a much better growth this fall season than those moved after the tree is entirely dormant. While we do not use commercial fertilizer, we do find that a 2" mulching of cow manure will make a tremendous difference in the growth and color of the foliage the following year. We do no root pruning, we just transplant them two or three times before they are 2-3" in diameter. After that we just dig them and plant them and grow about 98% of them."

* * * *

Stewart H. Willson,
Thompsonville, Conn.

"We have felt that summer tree moving is more or less experimental and we have not found time to do much experimentation. I can refer to but two instances where we moved sugar maples, two trees of three-inch caliper and one of 8-inch D.B.H. The small trees were balled and burlapped—leaves dried and fell off and a second set of leaves grew and the trees were still doing very well. The maple, with 8-inch D.B.H. was treated with Transplantone, but no Dowax or any other substance on the foliage; moved the last of August; watered well at time of moving and after moving, but the tree died. Do not know why."

* * * *

Physiological Functions of Trees and their Importance

A knowledge of the physiological functions of trees and how environmental factors influence these functions is basic knowledge for tree moving practices. It is a well known fact that trees must have air in the soil as well as above the soil. Air in the soil is only one of the necessary soil components necessary for proper tree growth and development. Others are optimum percentages of organic and inorganic matter and the most suitable kinds of each; soil water in the right amount and in the manner in which it is associated with the soil particle; the rate of accessability and run-off or drainage rate of soil water; the presence and availability of soil nutrients; all play an important part in the growth and development of trees. In short the components of the soil and their functions are closely tied in with and influences for better or for worse physiological functions of trees. If for any reason any one or more of the trees' functions are upset, one cannot expect to have a normal healthy tree. It might be said that the single most important part of the soil is the clay particle and its function. Around this clay particle is built up the phenomenon known as base exchange. Nutrients and the water which is the solvent of solutions and colloids in the soil are made available to

CONTROL INSECTS WITH PRATT'S SPRAYS

Pratt's Sprays are formulated for use in mist or hydraulic sprayers to give the greatest degree of safety and effectiveness in the dormant spraying of shade trees and evergreens.

SCALECIDE—The oldest and best known dormant oil spray. Contains 96% highly refined, highly paraffinic, dewaxed oil. For greater safety and effectiveness in the control of scale and other over-wintering insects on shade trees, evergreens and ornamentals.

PRATT'S SUMMER SPRA-OIL—A miscible 97% white oil type summer oil. For use as a dormant oil spray on ornamentals, evergreens and conifers where a lighter oil is desired.

PRATT'S SHADE TREE OIL—A 96% superior type oil for shade tree spraying.

PRATT'S E-25% DDT—An emulsifiable DDT for use in water——DDT sprays.

PRATT'S S-30% DDT—A DDT solution in a solvent for use in oil——DDT sprays.

Order Pratt's Sprays From Your Distributor
Bulletins Available—Pratt's Oil Sprays—Pratt's Sprays for Mist Blowers and Hydraulic Spraying

B. G. PRATT CO. Insecticides Hackensack, N. J.

you can rely on

MILLER-ROBINSON

Limb Loppers and Tree Saws To CUT Tree Trimming Costs

30-50%!

That's right! Thousands of installations have indicated time savings of up to 50%!

And... you don't have to worry about Miller-Robinson air-powered equipment breaking down. It will stay in operation year after year... cut clean and fast... do the job better. The reason? It's manufactured by pioneers in the field... each item proved by years of service.

Models available for every need, including insulated models for protection against accidental electric shock. Compressor units, fittings, hoses, accessories. Suggestions on compressor jeep, platform, or tractor mounting available.

Miller-Robinson equipment may be obtained throughout the United States from machinery dealers or supply houses, or direct from the factory where local outlets are not convenient. Every effort will be made to have a qualified representative call upon you with equipment and make a field demonstration on your work.

MILLER-ROBINSON CO.
7007 Avalon Boulevard
Los Angeles 3, California

☐ Please send me complete information on your air-powered limb loppers and tree saws.

Name_____
Company_____
Address_____
City_____ State_____

the roots of trees largely through the mechanics of base exchange. However, water by itself is absorbed by the roots. Base exchange is essential only for making the nutrients. Thus a tree can get all the water it needs even though the necessary nutrients are absent or not available in the soil. This is important. It means that a tree may get all or more water than it needs and still starve to death.

Transpiration and respiration as functions of trees which have to do with water loss can be affected by the type of soil and the corresponding soil functions. If a soil is so constituted that a sufficient quantity of water is available, one need never expect a tree to wilt if it has roots enough to absorb the needed water. While it is true that the rates of transpiration and respiration are affected by atmospheric conditions, it is as much so if not more essential that the sources of the necessary water be sufficient, and the medium from which a tree gets its water is the soil. Top-spraying can and does help as a temporary expedient, but it is not economically practicable for extended periods of time. Its expense can be justified under such circumstances as the transplanting of large and costly trees. Waxes, resin, and plastics can be sprayed on the foliage to help prevent wilting.

After a tree has absorbed the necessary water and nutrients, the importance of conduction and translocation must then be considered. A tree in good vitality will take care of these functions through the xylem and phloem tissues. The sapwood which contains most of the xylem tissue is the part of the woody plant through which the nutrients move to the leaves. The phloem, most of which is found in the inner bark then conducts the food to all growing parts of the plant. These growing points are found at the extremities of all the twigs and roots, in the cambium layer, and in the buds. Seasonal variations of temperature determine to a large extent which of the growing points are the most active.

One of the food products that is important to transplanted trees are the growth hormones that are produced in the leaves. These hormones, physiologists tell us move through the phloem to the roots where they function in stimulating the development and growth of new roots. They no doubt are important also in the production of callus tissue. Many plants do not develop new roots until the wounded tissue has callused over. The new roots do not necessarily develop from the callus but it seems that the callus must develop before new roots are produced. It might be interesting to note here that reversing the bark on young trees usually resolute in the dwarfing or partial dwarfing of these trees.

The twigs and root tips are thickening and the leaves have attained full size. If the production of growth hormones continues in the leaves, and the tree has been subjected to such treatment as to loose part of its roots, one might logically assume that the tree will attempt to satisfy the needs of the roots. However, if a tree cannot satisfy its own needs, the application of comparable hormones in the soil, or by injection, or spraying on the foliage, might help to satisfy the trees needs.

Anti-dessicants and Their Use

Dessication as a result of the lack of water can be overcome within limitations by watering the ball of the tree, by the application of anti-dessicants, or spraying the tree with water during the time of transplanting. There are many of these anti-dessicants on the market. They are essentially waxes, resins, and plastics or some form of one or the other. As indicated by Professor O'Rourke and his fellow-workers, some of these materials not only help to prevent water loss, but tends to slow down growth functions. This merits further study, not that I

(Continued on Page 18)

Wage War
ON SHADE TREE DISEASES
You can now CONTROL HICKORY, OAK,
SYCAMORE anthracnose. BLACK WALNUT, RHODODENDRON,
MOUNTAIN LAUREL leaf spot, RED OAK twig blight;
ENGLISH HAWTHORN leaf blight.
PURATIZED AGRICULTURAL SPRAY is the proven organic
fungicide having wide-spread application.
No spray residue — no staining of most house paints.
Completely water soluble — no clogging of spray nozzles.
Trouble-free application — can apply with other insecticides.
For Fruit Trees — use Puratized Agricultural Spray
to control scab and black rot or frog-eye leaf spot
on APPLE Trees; scab and fire blight on PEAR Trees;
brown rot blossom-blight on CHERRY and PEACH Trees.
Gallowhur
CHEMICAL CORPORATION
NEW YORK, N. Y.
Distributed by:
NIAGARA CHEMICAL DIVISION, FOOD MACHINERY & CHEMICAL CORP., Middleport, New York
GENERAL CHEMICAL DIVISION, ALLIED CHEMICAL & DYE CORP., 40 Rector Street, New York City

A Solution To The Stump Removal Problem

By Herbert J. Cran Jr.
Supt. of Trees, New Haven, Conn.

The Dutch elm disease, which was so widespread in New Haven three years ago, is now being curbed. Since 1950, we have been carrying on a complete program of spraying and sanitation and have thus reduced our elm losses from ten to four-and-one-half per cent of our total American elm population.

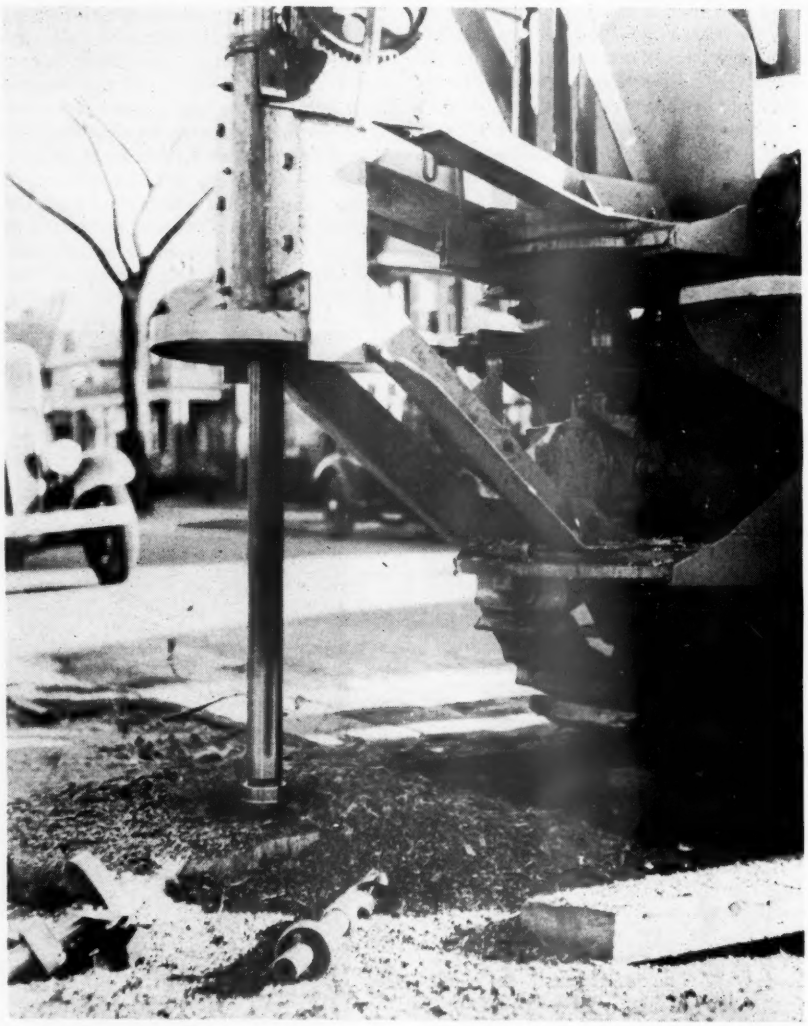
We are pleased with the results of our efforts to control the disease. Until this year, however, the New Haven Park Commission was faced with the task of removing some 1500 elm stumps that have accumulated on our streets over the past eight years.

We discussed our problem with the inventor Mr. John J. O'Brien, who has invented and designed a stump cutting machine. The machine as illustrated, is a frame with suitable bearings and spindle to which cutters up to fifteen inches in diameter are attached. Our particular rig is mounted to the rear end of a D-2 caterpillar and powered from the rear power take-off of the tractor. However, adaptations can be made to other suitable tractors.

We have been able to remove from three to five stumps, averaging forty-eight inches in diameter, each day with the stump cutting machine. The two operators first perform the preliminary operation of cutting the stumps close to the ground with a four foot chain saw. The stump cutter then takes over and performs its job without any damage to sidewalk, curbing or street pavement. We intend to carry on this removal work right through the Winter, regardless of snow and ice conditions.

Under the old system, in which the stumps were removed by hand, it would require approximately thirty-five man hours to remove a three or four foot one. By eliminating those 1500 elm stumps with the O'Brien cutter we will be able to do the job in one-fourth the time required by hand and the saving realized would be so substantial that the machine will have been paid for when only one-third of the stumps are removed.

If your municipality is confronted with a similar stump removal problem because of the Dutch elm disease, phloem necrosis or the oak wilt disease, we would be only too glad to give you any further particulars concerning the machine. If you prefer, you may write to Mr. John J. O'Brien of 90-39 54th Avenue, Elmhurst 73, New York, who would be pleased to answer any question you may have concerning the feasibility of adapting the cutting machine to your present tractor.



One of the three drills, 2", 5", and 15", used by the O'Brien Stump Remover in speeding this formerly expensive operation.

Fungus Attacking Palms

Scientists at the University of California Citrus Experiment Station at Riverside are hunting down the cause of a disease apparently due to a fungus, which has made inroads on native palm trees of the Coachella Valley, near Palm Springs.

More than 20 trees, all of them the native *Washington filifera,* the thick trunked fan palm which grows in the stream beds and oases of the Colorado desert, have succumbed to the trunk-rotting disease, said Dr. Ellis F. Darley, assistant plant pathologist at Riverside.

The trunk rot, said the University of California scientist, has not been found yet in native stands of the palms, but has done costly damage to domestic plantings of the trees in the same area.

The fungus which causes the rot apparently enters the palm trunk through wounds or cracks, Dr. Darley explained.

"The disease seems to be associated with heavy watering, where sprinklers throw streams of water on the trunks of the tree," he said.

The Riverside plant pathologist said the fungus associated with the disease is similar to those which cause the brown rot gummosis disease in citrus trees, which has been found in the Coachella Valley. The fungus has been found in every one of the palm trees killed by the rot and also in the soil around it, he said.

Washington filfera, the native to northern Mexico, both are widely distributed in park, street and home plantings throughout Southern California.

Solo Operator Rips Giant Redwoods

When California redwoods come too large for loading and milling, Oscar Rector, of Porterville, quarters them by himself, using a 7-55 McCulloch chain saw equipped with 8-foot blade and chain.

The log shown here is a section of a redwood, measuring 16 feet diameter at the stump, which was felled in the fast time of 18 minutes with Rector's McCulloch. The first ripping cut took 18 minutes to half the entire log, 16 feet long, 10 feet in diameter, as illustrated.

IN PORTER'S *NEW* TREE TRIMMER ARE THE FEATURES YOU SPECIFIED

We asked the men who use tree trimmers what feature they'd specify for the perfect trimmer. Then we listened — learned — and put their practical suggestions into our new tree trimmers. Check the 6 big features.

YOU NEED PORTER'S ONE-HAND PRUNERS, TOO

No better one-hand pruners are made than Porter's DuraCut and DuraShear for work on shrubs, bushes, vines, etc. Equipped with Plastisol cushion Grips that won't slip nor blister hands. Positive thumb lock prevents pinching. Cutting blades of heat-treated alloy steel.

DURACUT (Anvil Type) for fast, easy cutting. **$2.75**

DURASHEAR (Shear Type) for close, clean cuts. **$3.50**

$3.95 List price of head

6 Big Features

- ✓ All-steel heat-treated head.
- ✓ Special double steel hook practically eliminates bending, breaking, and twisting even when abused.
- ✓ Heat-treated alloy steel blade cuts easily — holds cutting edge.
- ✓ Pivot bolt stays tight and reduces friction.
- ✓ Spring located so it can't catch or interfere when cutting.
- ✓ Available with solid 8', 10' or 12' poles or jointed poles.

See your supplier for complete line of Porter Pruners or write for catalog.

H. K. PORTER, INC.
Somerville 43, Mass.

Spray *with* Standard

TO PROTECT AND IMPROVE TREES, SHRUBS AND ORNAMENTALS, GREENHOUSE AND GARDEN PLANTS, LAWNS!

STANDARD Elm Spray — Destroys the insect carriers of elm phloem necrosis and Dutch elm disease. Protects healthy trees from infection. Also valuable for control of many defoliating insects and scale crawlers.

STANDARD Dormant Spray Oil No. 1 (formerly DENDROL) — Effective control of scale insects. Destroys the over-wintering forms of these pests, eliminating scale build-up. Mixes instantly with water.

STANDARD Brush Killer — Effective against oak, hickory, elm, osage orange, brambles, poison ivy, poison oak. Can be used in summer or winter.

STANDARD 25% DDT Concentrate — For out-of-doors control of flies and mosquitoes. Also kills tussock moths, canker-worms, webworms.

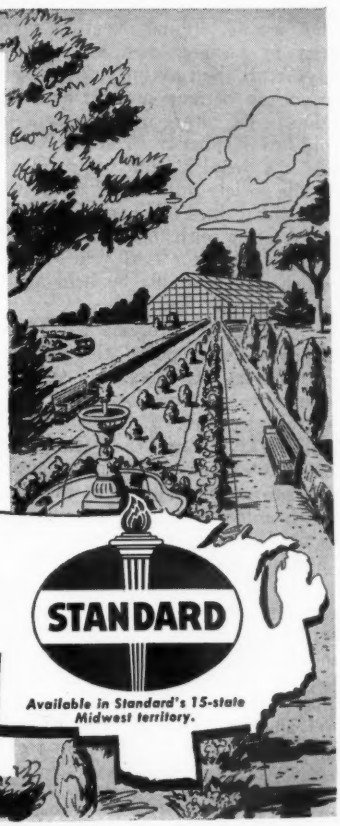
STANDARD Crabgrass Spray — Controls existing crabgrass growth, prevents seeding. Will not harm grasses.

STANDARD 2,4-D Weed Killer No. 2 — Controls dandelions, plantains, other broad-leaf weeds. An amine concentrate containing four pounds of 2,4-D per gallon.

STANDARD Plant Spray (formerly Garden Spray) — Efficient killing of many insects including red spiders, aphids, leaf hoppers, mealy bugs, lacewing bugs, and mites. Safe for plants, flowers, shrubs, trees.

STANDARD Garden Dust — An insecticide and fungicide. Controls most chewing and sucking insects as well as garden diseases.

STANDARD Summer Emulsion Concentrate (formerly VERDOL) — Use alone for sucking insects such as red spiders, white flies, certain scales, with nicotine for aphids and leaf hoppers; with lead arsenate for leaf-eating caterpillars.



Available in Standard's 15-state Midwest territory.

For more information on the above products as they pertain to your particular pest control problem, write:

STANDARD OIL COMPANY *(Indiana)*
910 South Michigan Avenue, Chicago 80, Illinois

Propagators Hold Successful Meeting

By Fred C. Galle

An unusually large group of plantsmen attended the second annual meeting of the Plant Propagators Society, held December 12 and 13 at the Wade Park Manor, Cleveland, O. The attendance totaled over 150 persons, including propagators from over 20 states and Canada.

The officers of the Society, who were appointed this past summer at Detroit, will hold office during 1952 and 1953. They are president, James S. Wells, Koster Nursery, Bridgeton, N. J.; vice-president, Dr. L. C. Chadwick, Ohio State University, Columbus, O., and secretary-treasurer, Ed ward Scanlon, Commissioner of Shade Trees, (City of Cleveland) Olmsted Falls, O.

Business Meeting

A business meeting of the society was held in the evening of the first day, with President Wells presiding. Mr. Wells reviewed the history of the organization and read the constitution and bylaws adopted by the board of directors. The society, he stressed, was formed as a society of skilled craftsmen in the field of plant propagation, with the aim of increasing the reservoir of knowledge about propagation.

All nurserymen and scientists attending this second annual meeting were welcome to become members of the society. After the meeting, membership in the society became possible only by invitation. All future meetings will be open only to members. President Wells outlined the requirements for membership in the society and talked about the scale of annual dues. He concluded the business meeting with the announcement of tentative plans for next year's meeting, which will probably be held again at Cleveland, O.

Speakers' Program

President Wells opened the meeting promptly Friday afternoon and stressed the importance of discussion rather than stiff, starchy lectures.

Arnold Davis, of the Cleveland Garden Center, gave the propagators a hearty address of welcome to the city. Edward Scanlon was loudly applauded for his fine work in organizing the Society, and a cable of greetings was read from Prof. F. L. (Steve) O'Rourke, now in Ecuador, one of the society's original members.

The first of the round-table discussions, on viburnum, was led by Richard Fillmore, Lake's Shenandoah Nursery, Shenandoah, Ia., who also introduced the topic with a paper "Viburnum from Cuttings." Fundamental factors in the successful rooting of these plants from

A portion of the 200 gathered for the 2nd Plant Propagators Society meeting (Photo courtesy Arnold M. Davis, Cleveland Garden Center)

cuttings are time, type, medium and culture, said Mr. Fillmore. Viburnums, in general, he continued, are easy to root from cuttings, but their survival is a more difficult matter. Twiglike cuttings of Viburnum juddi and V. carlesi root better in late July than do soft, succulent cuttings from strong vegetative shoots.

After Mr. Fillmore's introduction a brisk floor discussion followed which raised the pros and cons of rooting Viburnum carlesi cuttings, and several different methods were explained. It was agreed that cuttings which were allowed to form secondary roots transplanted and survived better than cuttings with only primary roots.

Viburnum from Seeds

Carl Kern, Wyoming Nurseries, Cincinnati, O., followed Mr. Fillmore with a paper on the propagation of viburnum from seeds. The viburnums, he felt, are variable in seed behavior, and therefore careful observation of the parent seed plants was advisable. Seeds of Viburnum lantana harvested late in the fall, after the seeds turn black, require two years for germination. Seeds harvested when still red and which are cleaned and stratified until fall planting germinate the following spring. Mr. Kern said that with some species of viburnum it is necessary to transplant and protect the young seedlings the first year because of their time of germination in the middle of August. He concluded his talk by showing some samples of viburnum seedlings and warned the group against too commercial an approach to propagation, saying that it should be a society of "plant propagators, not profit getters."

The final talk in the viburnum round table was given by Case Hoogendoorn, of the firm of C. Hoogendoorn, Newport, R. I. He discussed grafting viburnum, saying that most viburnums are easy to graft, with the exception of Viburnum carlesi. He spoke of his personal preference for Viburnum dentatum over the lantana variety for use as an understock. Plants grafted in the summer should not be forced after the union of the graft has taken place, but, instead, hardened-off for the winter. Growth during the following spring is continuous from this type of graft and better than from grafts made during the winter, he concluded.

Selection of Propagating Wood

After the discussion of Mr. Kern's topic had concluded, Dr. L. C. Chad wick presented a paper dealing with the importance of the selection of propagating wood. The causes of variability in stands of propagating stock and in the growth of lined-out stock from a propagation standpoint were mentioned. Dr. Chadwick discussed the lack of typical or uniform stock and cited the advantages of estab-

lished stock blocks or stock plants. He spoke about the carbohydrate-nitrogen relationship with reference to the time and condition of the wood for successful cuttings and scions. The morphological relationship, or tissue structure, influences the rate of rooting, amount of roots produced and the uniformity of the plants. Under the heading of morphology the problem of juvenility, the position of the basal cut, the point on the plant from which cuttings are taken and anatomical factors were mentioned by Dr. Chadwick.

The presence of flower buds often retards the rooting of many plants, Dr. Chadwick continued, and, in general, cuttings from male trees root better than from female trees. The propagator must be careful not to take wood from dormant plants that have been stunted or that are carrying a fungus, as these characteristics might be carried over to the new plant.

Maple Round Table

On the second day of the meeting a round-table discussion on maple was presented. Roy M. Nordine, of the Morton Arboreteum, Lisle, Ill., served as the leader for the discussion and opened the proceedings with a paper, entitled "Collecting, Care and Sowing of Maple Seeds." The germination of maple seeds is dependent upon retaining the moisture of the embryo and thus the seeds should not be allowed to dry out, he said. A good seed can be recognized if, upon being cut open, the embryo is green in color; a poor seed will have a brown embryo. Seeds of red and silver maple ripen in late May, while most other species ripen in the fall. Most maple seed should be gathered at maturity and stratified in sand at a temperature of 32 to 50 degrees Fahrenheit. At the end of his paper, Mr. Nordine listed a number of maple species whose seeds should be sown in fall and another group of maples whose seeds require stratifying and spring sowing.

Because of the absence of Wayne F. McGill, of A. McGill & Son, Fairview, Ore., his paper on "The Selection of Maple Understock, Budwood and the Timing and Placement of Buds" was read by Dr. William Snyder, Cornell University, Ithaca, N. Y. Norway maple seeds for understocks should be collected from disease-free trees, Mr. McGill advised. Although fall planting is the general rule with the Norway maple seeds, some seeds are stratified and planted in the spring. Budding is usually done in late July to early August, depending largely upon the season and condition of the budwood, the paper continued. Seedlings should be in full growth during budding. Budwood should be obtained from soft rather than matured hard

(Continued on Page 22)

COMPLETE LINE OF TREE SURGERY SUPPLIES

PRATT'S DORMANT SPRAY OILS

BEAN Power Sprayers

The best in tools and equipment for tree work.
The quickest and most dependable service.

Send for our catalogue and prices

Fruit Growers of Chester County, Inc.

West Chester, Pa.

Williams & Harvey Nurseries announce a

NEW BIG TREE MOVER

- **Lighter in weight**
- **Simpler to operate**
- **Fits Your Truck**
- **New Sizes**
- **Demountable**
- **Less costly**

Watch for further announcement and pictures on these pages soon.
For details and early delivery, write at once to

WILLIAMS & HARVEY NURSERIES

P. O. Box 7068, Country Club Station, Kansas City 13, Mo.

KUEMMERLING SAYS:

For best protection against the cold winter

Don't lose your tree trimmers because they get caught some cold day without warm clothing.

BIB OVERALLS

Heavy Construction Bib Overalls that go over all warm clothing—Cut out wind.
Order several sizes larger.

TUG-O-WAR JACKETS

Tug-O-War jacket — that can be washed — to put over warm sweater or wool shirts.

HOODED SWEAT SHIRTS

Heavy, double thick, hooded sweat shirts—small, medium, large.

BOOTS

Fleece lined boots—lined to the toe.

GALOSH

Rip resistant, light weight, five buckle galosh—swell for tree trimmers.
Sizes to fit over boots or shoes.

PRUNER POLES

10 to 12 feet pruner poles in Basswood or Western Hemlock.

Karl Kuemmerling, Inc.

401 CHERRY AVE. N. E. CANTON 2, OHIO

Increases Staff to Meet Expanding Sprayer Market

Inauguration of a sales expansion program by the Hardie Manufacturing Company of Hudson, Mich., Los Angeles, Calif., and Portland, Oregon, reveals the recent development and manufacture of machines of new design for the application of pest control chemicals and a greatly increased demand for such equipment in all parts of the world. The following new salesmen have just been added to the staff of the Hardie, Hudson, Michigan office.

Nelson T. (Hank) Bagnell, of Greenfield, Mass., will represent the company in New England. He was Vice President of the Lawrence Aero-Mist Sprayer Corporation when he joined the Hardie organization. He brings to his new task a wide experience in the pest control equipment industry. Served four years in the U. S. Navy during World War II.

Charles Wynocker of Berlin, New Jersey, will represent Hardie in New Jersey and Eastern New York. Mr. Wynocker has been in the farm machinery business for years and owns and operates a large orchard at his home.

Kenneth Betts will represent Hardie in Texas and New Mexico. He has a wide experience in the distribution of pest control chemicals and equipment.

William Coulter, a veteran of World War II, has been an automobile farm machinery salesman since his army discharge in 1945. He will represent Hardie in Eastern Pennsylvania.

James Russell who learned the sprayer business in the Hardie plant when he was employed in the production department during the last several years, has been appointed to repreesnt Hardie in Eastern Michigan and the Upper Peninsula of Michigan.

New!

PORTER-CABLE Electric CHAIN SAW

MODEL 110
14" CUTTER BAR

Only $99.50

Lowest priced one-man chain saw on the market! Compact and light (only 18 lbs.)—use it high in a tree or on the ground. Limbing, felling, under-cutting and bucking are a cinch. Pays for itself in no time at all!

THE SAW DOES THE WORK. Perfect balance, special design of log gripping teeth, and action of the chain provide maximum cutting efficiency with practically no effort. No dangerous jump or kick-back—won't pull to left or right.

NO SERVICING — nothing to get out of order. Equipped with Oregon® Chipper Chain—finest made. Hard-chromed edges stay sharp twice as long. Chain speed of 1400 feet per minute assures smooth cut on any log up to 28" dia. Tilt of cutter bar keeps chain from digging into ground when saw is set down. Powerful 115 V. Universal motor operates on standard AC or DC outlet.

Two portable generators — AC or DC — also available

MAIL COUPON FOR FULL DETAILS

PORTER-CABLE Machine Co.
1342 N. Salina St., Syracuse 8, N. Y.

Please send complete description of your new lightweight, trouble-free Chain Saw . . . also name of nearest dealer.

Name .....

Address .....

City ..... State .....

Manufacturers of Quality Portable Electric Tools
In Canada write: Strongridge, Ltd., London, Ont.

JACK ROBINSON,
Northeast Sales Manager

William H. Pulley, who has been active in the pest control equipment industry for the last several years has joined Hardie as direct factory representative in Delaware and the Del Mar Va Peninsula.

CHARLES WYNOCKER,
Berlin, N. J.

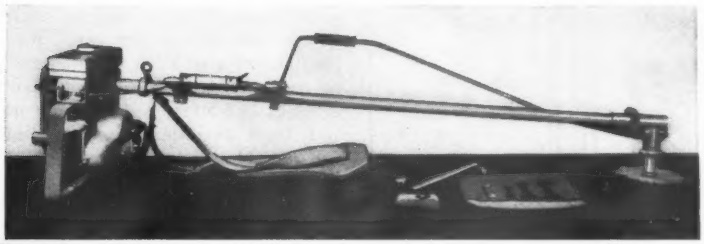
The appointment of J. A. (Jack) Robinson as Northeast Sales Manager of The Hardie Manufacturing Company will provide a larger measure of Hardie factory service to the many fruit and vegetable growers in New England, New York State, New Jersey and Pennsylvania, all of which will be under Mr. Robinson's supervision. Mr. Robinson brings to his new responsibility many years of experience in the pest control equipment industry. He has been an outstanding Hardie salesman since 1925.

NELSON T.
(HANK) BAGNELL,
Greenfield, Mass.

SPEED! SAFETY! EFFICIENCY! ECONOMY!

BRUSHMASTER

REVOLUTIONARY NEW BRUSHCUTTING MACHINE



- ONLY 35 LBS! EASILY OPERATED!
- OPERATION COMPLETELY PROTECTED!
- DOES WORK OF 6 HAND-CUTTERS!
- DOES NEATER, TRIMMER JOB!

Companies required to maintain right-of-way clearance are slashing costs with the new Brushmaster! Operated by ONE MAN, it does a faster, better job than a crew of good hand cutters . . . proven by time study! The one truly efficient, low cost way to clear brambles, vines, brush, bushes . . . even saplings up to 4" in diameter!

Opportunity . . . BRUSHMASTER FACTORY DEALERSHIP

RUGGED! DEPENDABLE!

Only 35 lbs. overall weight . . . yet Brushmaster is designed for peak efficiency! Air cooled, 2 cycle motor is really dependable . . . field tested under all conditions. Shaft-driven circular saw blade can be replaced in seconds. Write for complete specifications.

NOW . . . ACT QUICKLY

CHOICE TERRITORIES AVAILABLE!

$ **WRITE TODAY** on your own letterhead to Brushmaster Saw, Inc., 290 West Street, Keene, N. H. for complete details of procuring a valuable Brushmaster Factory Dealership!

$ **SURE-FIRE SALES PROMOTION PLAN . . . FREE.** Yes, every Brushmaster Factory Dealer receives a completely prepared package promotion plan which practically guarantees sales of this sensational new brush cutting machine!

H&R

BRUSHMASTER SAW, INC. IS A SUBSIDIARY OF THE FAMOUS HARRINGTON RICHARDSON ARMS CO., ESTABLISHED IN 1871

Write to 290A West St., Keene, N. H.

Transplanting

(Continued from Page 11)

mean to minimize the need of further study in all the phases of tree moving and the functions of trees as they are involved in tree transplanting.

Transplanting Procedures

Procedure in transplanting treatments are pretty well known. The alert arborist gives much thought and planning when choosing a tree for a specific purpose. Before moving treatment has been pretty well standardized. Moving operations also have been developed to where they are practical. After moving maintenance and treatment is still somewhat controversial. Many men will always fertilize at the time of transplanting and others frown on such practices. I think that there is much to be said for both points of view. The difficulty seems to be in choosing where and to what species to apply the correct treatment. It also depends on how the tree has been moved. Was most of the root system lifted, or was a good part of it lost? If a tree has lost most of its roots there is danger in applying fertilizers. Not enough of the roots remain so that the concentration of the nutrients may "burn" the existing plant rather than be of help. Whenever a backfill of good soil and peat moss is used, usually the results are good. The transplanted tree should be well watered, but not drowned. The presence of much water means that any soluble fertilizer that is added to the backfill will quickly go into solution and the concentration may be too great for the existing roots. On the other hand a mixture of soil and peat will normally supply the necessary nutrients. Again different species will require a variation in treatment and the type of soil itself may require a different treatment to supply the tree's needs. The required treatment may be such that a progressive development of the soils' characteristics is the best treatment as the tree grows and adapts itself.

Growth Hormones, Their Use and Function

What should one expect from the application of growth hormones? When one considers what is known of growth hormones and their functions, one tries and hopes but never really knows what to expect. We do know that trees produce these growth hormones in their leaves and that they travel to the roots through the phloem tissues of the inner bark; but many questions arise; are they the same in all trees? What effect does temperature have on their production and on their function? Should they be applied in solution to the soil or is it better to anticipate their need and spray them on the foliage or inject them into the tree sometime before transplanting begins? Can we use one standard hormone for all trees or should we develop a few or many for various trees? Hormones are widely used in plant propagation and it may be that the answer to our problems in the use of hormones can be found in the work that has been done in plant propagation. The reaction of these hormones may be entirely different in the field than it is under the more controlled environment in the greenhouse and cold-frame. The acids and colloids that are present in the subsoil may destroy them.

In much the same way we are at sea in the use of anti-dessicants in transplanting of trees. No doubt more work on the problem is being done than most of us realize but it is not being compiled and made avalible for general analysis and use. Dow-Wax, according to observations and reports from various parts of the country works very well where it is not subject to extreme temperature changes from one week to the next, the wax does not stay on long enough to be safely depended on. In a climate of more even temperature, it is quite satisfactory. The work with anti-dessicants at Michigan State College by F. L. O'Rourke and associates indicates that in some instances plant functions may be slowed down or even stopped for some days by spraying onto the foloage some of these materials. Again I am inclined to think that much more research has been done than most of us know about, but the results of such work have not been made available for general compilation and analysis.

Summary

I have not stressed my own experience or ideas. I have tried to imply what I feel is correct and what is not. This field is too big for any one person to be aware of and to any extent familiar with all of its ramifications. I think, though, that it is safe to say that planting procedures or the mechanics of planting have been pretty well standardized. The experience and research of many men has made this possible. The time has come when a more complete knowledge of the physiological functions of trees is necessary and available to the practioner in order that he will be able to give better service. We have seen that trees can be moved in summer and safely so, even where water only was used to insure the trees' survival. The use of water in this work, however, is costly and many times makes for awkward situations. We need, therefore something else to replace it, namely anti-dessicants. More research needs to be done, but I believe that reports on these practices by field men are just as important. I believe that the results of both will lead us to the right answers sooner than either working alone.

BARTLETT

WE Combination Pruner and Saw

Is now available for immediate shipment. Simply write for our attractive folder describing this Combination in detail and we will reply by return mail.

Tree Paint

Made with pure Egyptian black asphalt base. Easily applied with ordinary brush. Ingredients helpful for healing tree wounds. Will not freeze, crack or blister. (Packed in convenient containers of 6—1 gal. or 24—1 qt. cans.)

Bartlett Tree Surgery Supplies are well known wherever trees are grown.

Ask for Catalog No. 33

Bartlett Mfg. Co.

3028 E. Grand Blvd.

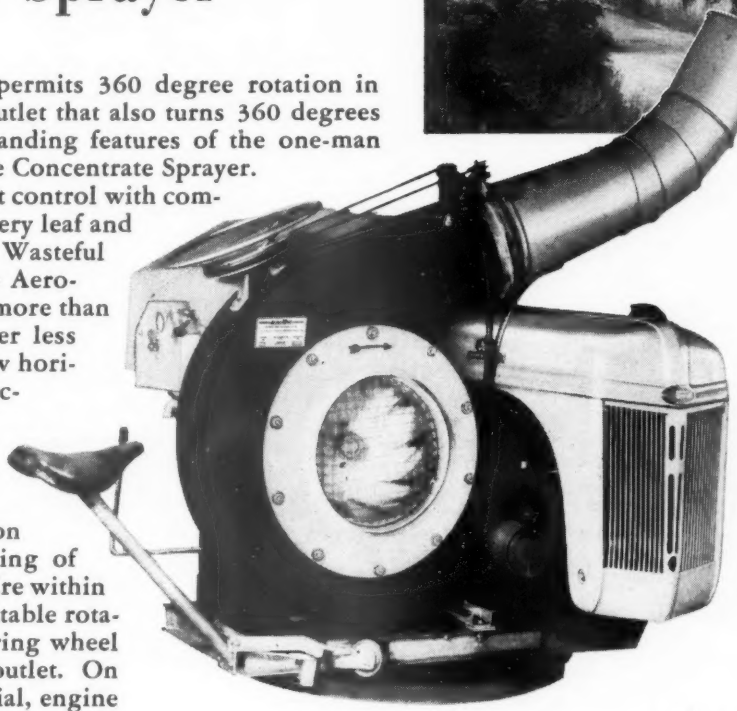
Detroit 2, Mich.

"Full Circle Coverage"

In Shade Tree Pest Control with the

HARDIE AERO-MIST®

Shade Tree Sprayer



A turret-type mount which permits 360 degree rotation in either direction and an air outlet that also turns 360 degrees in either direction are outstanding features of the one-man Hardie Aero-Mist Shade Tree Concentrate Sprayer. Ease and speed in tall tree pest control with complete, uniform coverage of every leaf and bark surface are assured. Wasteful "run-off" is eliminated. The Aero-Mist sprayer cuts spray cost more than 50% as compared with other less efficient methods. Tests show horizontal coverage—and satisfactory mosquito kill—up to 1000 ft.

Hardie high pressure pump equipment and propeller type positive agitation assure atomization and mixing of spray material. All controls are within easy reach of operator. Turntable rotation is semi-automatic. Steering wheel control is provided for air outlet. On and off valve for spray material, engine throttle control and clutch are under the operator's hand. Brake locks the machine in any desired position.

The powerful, big volume air stream carries the spray to the crown of the tallest trees, agitates the foliage and assures adequate coverage of every leaf and bark surface.

" a whale of a sprayer!"

Two sizes meet every need

Model L80—8000 cu. ft. air per minute at 150 mph though 10 inch outlet.
53 gal. steel tank. Weight 1500 lbs.
Model L40—4000 cu. ft. air per minute at 150 mph through 8 inch outlet.
26 gal. steel tank. Weight 700 lbs.
Readily transported on motor truck or trailer.
Formerly product of The Lawrence Aero-Mist Sprayer Corp.

Ask your dealer • Use the coupon.

HARDIE
PEST CONTROL EQUIPMENT
• SOLD AND SERVICED ALL OVER THE WORLD

The Hardie Manufacturing Company,
Hudson, Michigan.
3825 Santa Fe Ave., Los Angeles 58, California
1435 N.W. Northrup St., Portland 9, Oregon.
Please send catalog.

Name_____
Address_____
City_____ State_____
I am especially interested in_____

New Lightweight "Brushmaster" Machine Cuts Brushcutting Costs

Somewhere, each morning, a six-man crew starts out on the tedious task of cutting down accumulated brush and undergrowth which hampers right-of-way clearance. Armed only with machete type knives and hatchets, their work is arduous and hazardous, and, usually, time-consuming. Elsewhere, one man sets out to do exactly the same type of job. He carries a modern, new powered brushcutting machine. He will clear more brush, in a neater, trimmer manner, and he will be completely protected from job hazards. This is the difference, seen daily, between old and new brushcutting methods.

For many years companies which are forced to maintain right-of-way clearance . . . railroads, utility companies, contractors, etc. . . . have been plagued by the spiraling costs of labor, and by the inefficiency of cutting brush by hand. Many substitute methods have been tried . . . chemicals, bulldozers . . . but none has been considered successful.

The Brushmaster Saw Company was formed as a subsidiary of a famous eighty-year-old manufacturing concern, solely to produce, through research and field testing, a machine which would cut brush and undergrowth with new-found efficiency, at an appreciable saving of costly man hours.

A famous arborist, with years of experience in the brush cutting field, applied his knowledge and inventive genius to the task. The nationally known parent corporation set its staff of engineers to work and contributed its huge manufacturing facilities. Finally, after exhaustive field tests, the Brushmaster Saw was considered ready for demonstration.

It took no more than one thorough demonstration for all those present to realize that a solution to the brushcutting problem had been found. Railroads, utility companies, contractors, arborists, lumber companies, highway departments . . . everyone concerned with right-of-way maintenance saw the time study proof of Brushmaster's easier, faster, cheaper method.

Brushmaster has been designed, too, with rugged, daily usage in mind. The air cooled, two-cycle motor is dependable as well as easily maintained. The circular saw blade can be replaced in a matter of seconds. And the entire machine, easily carried by one man by a sling suspension type belt, weighs only 35 pounds. In addition to its efficiency, Brushmaster is pleasing to operators because of its safety. No moving parts of the motor are exposed; there is the angular bar which prevents the operator from moving into the blade; there is an engine throttle located at the hip for quick engine control, and an automatic clutch disengages the saw when the engine is idling.

The Brushmaster, operated by one man, will actually cut as much brush, in a given period of time, as six good hand cutters. And it is completely effective on briars, brambles, vines, brush . . . even on stout saplings up to 4" in diameter.

Yes, the solution to the thorny brushcutting problem has at last been solved by Brushmaster, and the many companies now using this new brushcutting machine will attest to its all around efficiency.

Milwaukee Uses Pauls Scarlet Thorns On Streets

(Upper) Griggs Waring, City Forester, Milwaukee, Wis. and one of the Pauls Scarlet Thorns recently planted. (Left) A general view of the street showing why this fine small tree was chosen.

Humanity's challenge to chemical research—

Protection for ALL the nation's trees

One of the biggest single problems confronting us is a natural one: trees, like all plant life, are victims of insects. In fact, insects and disease annually destroy 30% more trees than are destroyed in forest fires!

To help lick this problem Pennsalt researchers have developed effective insecticides both for large-scale aerial spraying and for smaller ground applications. In a recent outbreak of spruce budworm in the great Northwest, Pennsalt insecticides proved 99% effective, and provided control of the infestation for a cost of slightly more than one dollar an acre. The value of the saved timber was at least $785 an acre.

For *your* problem of shade tree protection—as for this large-scale timber program—Pennsalt researchers have developed effective, quality insecticides that provide economical control of insect infestation on shade trees.

In the past few seasons more and more arborists have turned to Pennsalt DDT Emulsion 34 because of its convenience, economy, and relative safety in use.

DDT Emulsion 34 is 34% DDT or *3 full pounds* of DDT per gallon, which means one-third less material to handle and store; less solvent used per pound of DDT; less run-off or drip of active ingredients; greater effective coverage whether you use mist concentrate or hydraulic equipment.

Other Pennsalt products for Arborists

Pennsalt Hi-Gam W-25 (25% lindane wettable powder); Pennsalt WB-50 (50% DDT wettable powder); Pennsalt Toxaphene E-60 (60% toxaphene emulsion concentrate); Pennsalt Ferbam (fungicide); Technical DDT (for formulators).

For additional information write to: Agricultural Chemicals Department, Pennsylvania Salt Manufacturing Company in Philadelphia (7), Penna., Bryan, Texas, or Montgomery, Ala.

Pennsalt Chemicals

Propagators

(Continued from Page 15)

wood. Plump buds are the best kind and wood should be used within 48 hours after cutting. To grow straight whips, Mr. McGill recommended that the bud growth in the spring be staked until the whip is three to three and one-half feet tall.

Grafting of Maples

J. Howard Burton, Burton's Hilltop Nurseries, Casstown, O., followed with a discussion of the grafting of some maples. Mr. Burton recommended using established, potted seedlings for understock, basing his observations primarily on his experience with Japanese maple. He recommended plunging the grafts in peat at an angle in the sweat box or grafting case. The importance of using uninjured scion wood was mentioned, and it was suggested that the wood be waxed before making the graft. Several persons from the audience spoke up, recommending that the entire grafted plant, including the union, be waxed. Grafting in the summer makes it possible to plant the dormant stock

Dr. Henry S. Skinner, Curator of the National Arboretum addressing the Plant Propagators Society.

the following spring. A lively discussion followed the papers.

Then, Dr. Henry S. Skinner, curator of the National Arboretum, Washington, D. C., presented an interesting talk on the vegetative propagation of oaks and a suggested research technique. Vegetative propagation of oaks may be of major importance in the next few years, he said, in view of the current oak wilt epidemic. The best results in the past in rooting cuttings of oaks have been with the evergreen types, he continued. He cited a paper which mentioned the successful rooting of 4-year-old cuttings of red oak when they were treated with indoleacetic acid, while untreated cuttings did not root. Further experimentation, he said, is needed with the various methods of layering different species of oak. Grafting of oaks is the most successful method of vegetative propagation at the present. Scions should be grafted on stocks of the same group and, preferably, of the same species in many cases.

H. Gleason Mattoon, of the Wilmat Holly Co., Narberth, Pa., was the discussion leader for the holly round table and gave a talk on the propagation of hollies by grafting .

Winter grafting of holly in a greenhouse grafting case is a sure method, reported Mr. Mattoon. Ideally, stock and scion should be of the same species, although English holly grafts satisfactorily on American holly. Grafting the last named on the former, however, is not too successful.

Bench grafting using a whip and tongue graft was described. In this method, the grafts are placed in a grafting case to callus. Patch budding of a staminate tree on a pistillate tree was also mentioned, with the speaker adding that the trees must be checked frequently to see that one portion does not dominate the other.

Holly from Cuttings

Growing holly from cuttings was discussed by Roger W. Pease, West Virginia experiment station, Morgantown, W. Va. He mentioned the problem of juvenility in holly as a factor in rooting, but described the problem as not critical. The speaker cited the variation among the clonal plants of holly and suggested that clones that root easily be chosen.

Following the banquet Saturday eevning, December 13, Dr. Chadwick showed color slides of plants and gardens taken on his European trip.

Reprinted courtesy
American Nurseryman

NOW

SEYMOUR SMITH presents

PRUNING SAWS

that CUT FASTER
LAST LONGER

No. 922

No. 622

No. 514

Specially designed for arborists and other professional users. A complete line of 7 patterns covering all requirements up to chain saw work.

Blades — made by Sandvik of famous Swedish charcoal steel — have fast-cutting, large, deep teeth with heavy set to prevent binding. Handles are of laminated hardwood, streamlined and free from horns and projections.

also LOPPING SHEARS

5 patterns in various sizes, including the new Seymour Smith TIFFANY PRUNER.

TREE PRUNERS

No. 11 Pruner Head

No. 11 "Telephone" tree pruner head, with 1" capacity and No. 12 with 1½" capacity are the finest available. Also rugged poles of selected spruce with seamless aluminum joints.

POLE SAWS

No. 20 Saw Head

No. 20 saw head has 16" needle point teeth, is adjustable to 3 positions. Uses standard poles.

PRUNING SHEARS

No. 90 Professional Double-Cut

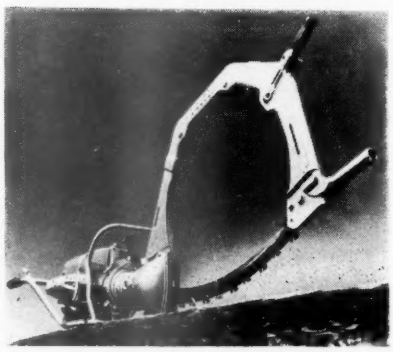
For generations Seymour Smith has been supplier of the finest hand pruners for professional use. Made in 8 models for all requirements.

Most dealers carry Seymour Smith pruning equipment. Write us for descriptive literature.

SEYMOUR SMITH
OUR 103rd YEAR
The Line of Quality

SEYMOUR SMITH & SON, INC.
32202 Main St., Oakville, Conn.

Disston Free Flow Bow Saw



DOW

ESTERON 245 ACHIEVES A NEW HIGH IN WEED TREE CONTROL

Basal Bark Treatment Is Effective Any Month in the Year!

Winter has been established as a good time for basal bark application to control weed trees shading out young pines and other desirable timber species. This new technique—spraying the basal 12 to 15 inches of brush stems or tree trunks with Esteron® 245 in kerosene, diesel or fuel oil—is more economical than cutting, and regrowth is reduced to a minimum.

New seedlings and young trees of desirable coniferous or hardwood species, which cannot compete so well with older or more numerous weed trees, grow more rapidly when these weed trees are controlled. Esteron 245 containing powerful, low-volatility propylene glycol butyl ether esters of 2,4,5-T is unexcelled for year-round basal bark spraying. (For foliage application during the growing season, Esteron Brush Killer containing low-volatility esters of 2,4,5-T and 2,4-D controls many types of undesirable woody growths.) Both products are widely used in all seasons for spraying cut stumps to prevent resprouting.

Inquiries from utility maintenance and forest engineers on the control of many species of weed trees with Dow's result-getting brush killers will receive prompt attention. Dow sales and technical men are available for consultation and assistance. Write us, THE DOW CHEMICAL COMPANY, *Agricultural Department*, Midland, Michigan.

you can depend on DOW AGRICULTURAL CHEMICALS

DOW

NAA NEWS

By PAUL E. TILFORD, *Secretary*
Box 426, Wooster, Ohio

Safety Needs More Attention

The accident rate in tree work is high, at least the insurance companies tell us that. If we were to make a list of the causes of accidents in tree work it would be a fairly long list. It would include such things as carelessness, poor judgment, insufficient training in safe methods, and many others which it would seem something could be done about.

Many lines of industry have by a concentrated effort greatly reduced the number of accidents and some industries formerly considered hazardous are now relatively safe. This has not come about easily. It has been brought about by developing safe practices and continually teaching safety to employees.

Our National Arborist Association realizes the great need for more safety in the tree-care industry. We have tried to call attention to the need of more safety. We have a Safety Committee of which Karl Kuemmerling is chairman. This committee has talked safety at meetings. A set of safety rules for operating chain saws has been developed. The committee has worked hard to promote greater safety — but we still need more safety.

Accident Reports

Insurance companies have suggested that accurate reports of accidents which occur should help prevent someone else from having the same accident. With this in mind we started reporting accidents in our Association News Letter two months ago. A few reports of actual accidents which may teach a lesson are given below.

Safety Lines Cut

Bill was an experienced tree climber. He had worked in trees for the past three years and never had an accident of any consequence. Within an hour after going to work one morning last November he was in the hospital with multiple fractures of his pelvis.

A large tree was being pruned and Bill was hanging clear on his rope and safety belt making a good sized cut. The rope broke; a good man was painfully injured, hospitalized for several weeks, and will be unable to do much work for some time to come.

Why did the rope break? The rope appeared to have been cut enough to weaken it. The injured man said that he examined the rope before climbing the tree. It was definitely known that the rope was examined and was in good condition two days before the accident. The rope had not been in contact with tools on the truck. The best guess seems to be that somehow in getting the saw and rope into the tree, the rope came into contact with the saw. This is only conjecture but, if it is true, possibly the use of a scabbard for the saw would have prevented the accident.

In another accident caused by a safety rope breaking, a man cracked two vertebrae and broke his ankle. He might just as well have broken his back and killed himself. An examination of the rope revealed that it had been cut, which was responsible for its breaking. In this case the safety rope had been carried on the truck bed with saws and axes.

A man was drawing himself into a tree with his climbing rope over a cable. The cable cut the rope and the man fell 25 feet breaking his arm. It was said that the cable was rusty which caused it to cut the rope. Perhaps so, but it would seem unsafe practice at all times to use a safety line over a cable. It is always possible there could be a sharp or rough spot on a cable sufficient to damage a rope.

No one would risk his life by using a safety rope known to be worn and weak. In the reports of the above three accidents there was nothing to indicate old or worn ropes. In two cases the ropes showed evidence of having been cut and in the other instance it was known to be cut by the cable.

The moral to these accident reports is to take proper care of climbing ropes. It is dangerous to carry them in contact with saws or other sharp tools. A few cut fibers may not be detected by a quick examination of the rope but may weaken it so that it will break under a man's weight and cause a serious accident.

Suckers Have Weak Attachments

Another type of accident which we have had two reports of recently is where a sucker pulls out and lets a man fall. In one instance the man had crotched his rope over a sucker in an oak he was working in. In the other instance a man was climbing an eucalyptus tree when a two-inch sucker pulled off from the side of the tree and let the man fall.

It should be remembered that sucker growths are always likely to have weak attachments and may pull out under strain. They are unsatisfactory for crotching safety ropes and for supporting a man.

Testing and Care of Climbing Rope

The following notes are taken from the National Safety Council's instructions on rope.

Do not drag rope over the ground, rough or sharp objects, or another rope.

In making a rope fast, avoid sharp bends over unyielding surfaces. Choose a smooth round surface of sufficient diameter to avoid excessive strain on the fibers.

Don't strain a rope with a kink in it.

Avoid high temperatures when thawing out rope. Thaw it slowly.

Alternate wetting and drying of a rope is more damaging than its being constantly wet.

Frozen rope becomes brittle and may snap suddenly.

Examine rope periodically for cuts, worn spots, acid stains, and dry rot. Acid or caustic damage will show: A "dry" look and brittleness, broken fibers and abrasions, and black or rusty spots. Examine the inner strands of rope by untwisting the rope to see that inside yarns are bright, unspotted and unbroken.

Nursery Advertising

(Continued from Page 7)

2. Where there is any question of the true identity of the plant advertised, the botanical name should be included in the listing.
   Misleading "coined" names that make consumers think they are getting an entirely "new" variety of plant, when it may be only a common variety known for a long time, are deceptive and should not be used.
3. Where the plants are not nursery-grown, a statement should be made in the ad as to their true nature.
   Indirect misrepresentation of nursery plants through distortion of details editorially is discouraged. If the plants offered for sale are not nursery-grown, then the true origin of the plants should be stated, such as "collected wild stock."
   Most nursery grown plants are officially inspected and certified. When not so inspected and certified, it should be so stated in the copy.
   Where a rose plant is other than a two-year, No. 1, field-grown plant, the copy should indicate its true nature. Rose plants previously used for greenhouses for cut flower production should be so designated in the copy.
4. When nursery stock is pictured, the illustration should be a reasonably true representation of the item. If illustrations do not conform to this recommendation, then the true size of stock offered should be prominently indicated.

New Lightweight Rotary Pruning Saw

A six-inch pruning saw rotated at 5000 RPM by a sealed air-motor, which operates from any portable compressor generating 10 cubic feet of pressure, is now available to orchardists, public utility companies, and others interested in rapid large-scale pruning work.

Introduced under the trade name Aerosaw, the cutting head of the unit, housed in a magnesium guide-shield and weighing two pounds assembled, is designed to prune limbs up to three inches in diameter from any angle and is finger-tip controlled by the operator. The cutting unit is mounted on a two and-one-half-foot handle to which additional five foot sections may be attached for pruning at various heights.

Ease and speed in pruning and trimming work are claimed for the Aerosaw, which is guaranteed against manufacturing defects. Inquiries for detailed information should be addressed to TREES.

Buisman Elm

Dear Ed:

In connection with propagating the Christine Buisman elm by grafting, I thought you might be interested in the report I have been reading by Miss Went of the Netherlands. In trials where she grafted the Buisman elm to *Ulmus hollandica* layers and *U. carpinifolia* seedlings and then tested the trees for resistance to the Dutch elm disease, the following results were obtained:

	OLDER GRAFTS Numbers of Trees			1-YEAR-OLD GRAFTS Numbers of Trees			
Year of Inoculation	Inoculated	Diseased	Slightly Diseased	Healthy	Inoculated	Diseased	Slightly Diseased	Healthy
1932	34	1	0	33	0	0	0	0
1933	37	3	3	31	13	0	0	13
1934	74	3	16	55	25	0	0	25
1935	103	1	5	97	4	0	0	4
1936	180	0	0	180	15	0	0	15
1937	244	5	0	239	4	0	0	4

Miss Went found that 1-year-old grafts are usually more resistant than older grafts, the same being found true of selections other than the Buisman elm. She also records movement of the fungus for distances of over 4 feet below the point of inoculation in 3-year-old Buisman elm grafts. Such movement might cause serious trouble if the Buisman was grafted to rootstocks that are very susceptible to the disease. If a resistant rootstock was used which is completely compatible with the scion it would seem likely to be as good as if the Buisman was on its own roots. We will see if we can't find you a resistant rootstock among the Zelkova seedlings you have sent us. Then you can have the short-time, easy job of determining whether it is completely compatible.

Roger U. Swingle
Senior Pathologist
U. S. Dept. Agriculture

praised by professionals —a boon to amateurs

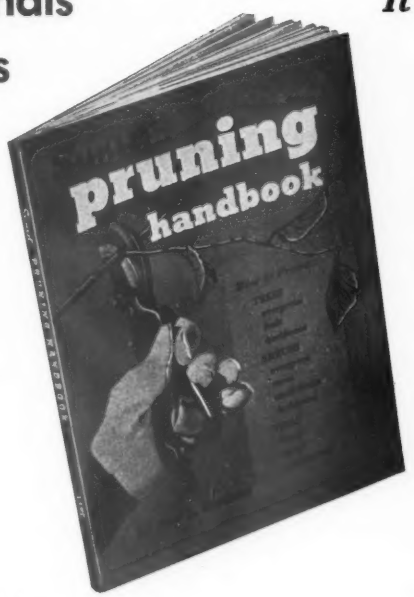
The Sunset Pruning Handbook, already in its second printing because of its eager acceptance by home gardeners all over the country, is the first complete book for the layman on this important phase of gardening.

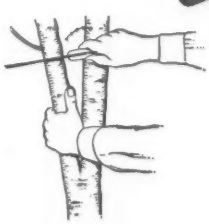
It contains everything a gardener needs to know about pruning and is profusely illustrated with dozens of "how to" drawings.

Each illustration shows precisely what the tree, shrub or vine looks like before pruning; how the proper cuts are made, and what the appearance is after pruning.

Full information on Camellias, Rhododendrons, Azaleas, Roses, and 156 other shrubs is included. Detailed instructions also cover evergreen and deciduous trees — including shade, fruit, flowering and dwarf trees.

Professional nurserymen and gardeners have praised this **Sunset Pruning Handbook** as the most comprehensive and accurate—yet most easily understood—book of its kind.





ONLY $1.50

Library binding $3.00

Your Satisfaction Fully Guaranteed—Or Your Money Back!

It's authoritative . . .

Roy L. Hudson, outstanding Western garden authority, is the author of the Sunset Pruning Handbook. After a quarter of a century of intensive and practical horticultural experience, he was convinced that pruning was the least understood of all garden functions. Thus, he did extensive research to develop a book on pruning that would be USEFUL AND PRACTICAL IN ALL SECTIONS OF THE COUNTRY.

Mr. Hudson has had wide experience in tree surgery, landscape gardening, and commercial nurseries. At present he is supervisor of maintenance for the Recreation and Park Commission of San Francisco, where his responsibilities include the care and maintenance (including pruning) of the world-renowned Golden Gate Park.

Mr. Hudson is a past-president and one of the founders of the California Horticultural Society, and is a member of the American Rhododendron Society and other garden groups.

To LANE PUBLISHING CO.
Menlo Park, Calif.

Gentlemen: Please send the following books at once—postpaid, as per your 10-day refund guarantee:

—SUNSET PRUNING HANDBOOK $1.50
—Casebound Edition 3.00
(Calif. Sales Tax: 3%) . . $——
Amount enclosed . . . . $——

Name _____
Please PRINT
Address _____
City _____ Zone____ State____

Authors and Books

The following books may be ordered from TREES Magazine, 7621 Lewis Road, Olmsted Falls, Ohio.

THE TREES OF LONG ISLAND, by George H. Peters. Long Island Horticultural Society, Farmingdale, Long Island, New York. 63 pgs. illus. $1.00.

This is Publication No. 1 for this Society and it constitutes a notable beginning. The book is extremely interesting and well illustrated. Some very out of the ordinary tree interest must have prevailed in the Long Island area in years gone by. The lists of rare species grown there reads like a list from an arboretum. Favorable growing conditions have produced some very large specimens in many species. The book will serve as an excellent guide to one interested in running down many of these unusual and large trees.

SUNSET PRUNING HANDBOOK, by Roy L. Hudson. Lane Publishing Co., Menlo Park, Calif. 80 pages. illus. paper $1.50. Buckram $3.00.

There have been many pruning books published but few have rung the bell. This book by a skilled practical man gives details described in a fashion easily understood. Careful reading and study of this text will give even the least of the amateurs a fine understanding of the principles of pruning and of the details concerning many individual species. We can recommend this book highly.

Highway Trees

(Continued from Page 9)

less foliage reduction by trimming for road and sight clearance. This would reduce the road authorities maintenance costs. It would reduce danger hazard of trees falling onto traffic. Low hanging branches would not force traffic out into the center of the pavement causing accidents. In road widening the shorter-lived more easily replaced public utility structures would be sacrificed. There could be fewer automobile and tree accidents with their resulting publicity. It would be easier for the utilities to inspect their lines and the road authorities perform the necessary tree trimming.

The objections to this location is the utility structures would be more conspicuous, less shade on the road and more shade on the adjoining fields. In some locations the shade and the feeding tree roots in the adjoining fields would be a serious problem to the adjoining property owner but in others it might be a benefit.

With constructive thought today we can eliminate many future roadside tree problems that we face today from former plantings. In proposed memorial plantings we should insist the planting be dedicated to the group and not an individual tree named for each individual to be honored. These plantings should receive special thought in locating them where they will not be removed in the future. Fruit and nut trees should be used only after careful consideration because of the nuisance they cause, the danger of spreading insects and disease to adjoining orchards and the temptation to vandalism by the traveling public.

Let's glance into the future and see what it holds for the roadside tree. The public in the past has demanded better and more pleasant highways and it will continue to do so in the future. The public is often slow but insistent in its demands often not condoning things too far in advance of its demands. We should advance roadside development with this demand but not be out too far in advance with radical ideas and plans.

The highway of the future will have wider rights of way and the road authorities will have clearer legal authority over the roadside tree. This will aid in solving some of our most complex roadside development problems of today.

Our automobiles of the future are going to be faster and more powerful so the traveler will see less and less of the detail in our plantings. We will use more trees and less detail plant material. With this trend we may be able to lengthen out the planting distance betwen trees and still obtain the desired results. With the faster speeds the eye of the driver is going to be focused farther ahead and he will see less of the depth of our plantings to the side.

There may be considerable change in the public utility structures due to new developments, better techniques and public demand. This may lessen tree and wire interference on our roadsides of tomorrow.

The public demand for roadside resting places is going to continue at an increasing rate. More of our people are building their homes in the edge of town or out in the open country and they are going to demand a pleasant drive to work and to shop. This trend in living will take more and more of our land near the cities into small area private ownership leaving less and less recreational land open to the public. More and more people are going to use our highways and facilities for outdoor recreation. Many persons with families are going to be restricted by high prices of food and lodging to the use of outdoor recreational facilities nearer home. This will bring increasing demands for picnic facilities along our highways. Public health is going to force better toilet facilities at these locations. It is difficult to picture roadside resting areas without shade and trees. This demand is going to mean the highway will include more and more existing woodlands now in private ownership but adjacent to the highway.

In heavy snow areas we are going to use more live tree snow fence to reduce the maintenance cost of snow removal. This means we will have to give more study to their proper location and their care.

New tree species will have to be developed for our roadside planting. Species will have to be selected that are more insect and disease resistant or more extensive spray control programs developed. We will have to do a better job of selecting tree species to fit the planting site, soil and location to produce healthy trees that will cut our maintenance costs to the minimum. Birds and animals can be hazards when they get out in traffic and we may have to give this serious study on the roads of tomorrow. We may have to select tree species that will not attract them to the traveled roadbed.

More and more of the existing growth is going to be saved in place in road construction as a matter of economy. Better records on the trees we plant will be kept and from the history of these trees as to its success or failure we will be able to improve our techniques.

Closer study will have to be made of each tree planing location so it will not have to be destroyed by future utility lines, drives, building and sidewalks. The better we do this job the fewer older trees will have to be sacrificed each year in the name of improvements.

Chemical weed and brush control will grow very rapidly in the years to come. It will present many tree problems some of which will be immediately indicated and others will be of delayed action. Great care will have to be used with this material so as not to destroy the beauty of our roadsides with resulting public reaction.

Our profession in the future will require more and more knowledge, skill and training. The aging of the profession and the demand for better training bring us closer and closer to the highway engineer. This will result in better cooperation and respect on the part of both professions.

(This paper was presented at the Eleventh Short Course on Roadside Development at Ohio State University, April, 1952.

Observe
National Arbor Day
"The Last Friday
In April"
(APRIL 24, 1953)

THE O'BRIEN STUMP REMOVER

The O'Brien Stump Remover Operated by the Toledo, Ohio, Div. of Forestry

A powerful answer to one of the slowest and costliest of municipal Street Tree problems.

Comprising power with a finely tooled series of three cutting bits—2", 5" and 15" in diameter.

This new development will cut stump removing costs to unbelievable low figures.

Write for Showing of a Special Movie—See This Cost-Cutting Machine in Action.

The O'Brien Stump Remover Co.

90-39 54th Ave. **Elmhurst 73, New York**

RETURN POSTAGE GUARANTEED
Trees Magazine, 7621 Lewis Rd.
Olmsted Falls, Ohio

Postmaster: If addressee has moved and new address is known, notify sender on Form 3547, postage for which is guaranteed.

Sec. 34.66 P. L. & R.
U. S. POSTAGE
PAID
Olmsted Falls, Ohio
Permit No. 12

Guaranteed—Not To Contain Chlorophyll

7 REASONS "GREEN THUMB" ASSURES YOUR BECOMING A GREENTHUMB USER

1. 97% pure, organic sedge reed, bacterially high content.
2. One cubic foot makes upward to 50 cu. ft. of good soil, or 15 cubic feet of rich organic soil.
3. Excellent natural nitrogen—readiness to use—going to work at once.
4. Delightful flowing into the soil in handling—uniform structure creates maximum economy.
5. Normal moisture holding, with gradual delivery only to soil and plants assure the maximum in plant development.
6. A product processed, based on 30 years proven continuous operation, has a ph of 4.5 to 5.5, that is quickly, easily and economically adjusted to needs of any plant material.
7. The most efficient and economical soil building nature product in existence.

"Green-Up America With Green Thumb Peat"

GREEN THUMB PEAT-HUMUS CO.

CAPAC, MICHIGAN

EASTERN DISTRIBUTOR:

F. N. PRICE SUPPLEE, 1014 GIRARD TRUST BUILDING, PHILADELPHIA 2, PA.